OPTOSKY Spectroscopy Solutions

Datasheet

HandHeld FieldSpec Spectrometer | ATP9100

Features

- High sensitivity, the quantum efficiency of the detector can reach up to 60%, and the near-infrared sensitivity is 40% higher than that of traditional PDA detectors
- Fast measurement speed, one sampling time is less than 10 milliseconds
- Optical fiber probe measurement, light weight, flexible use
- Built-in anti-secondary diffraction coating and filter, high accuracy
- Dynamic dark current correction to reduce the influence of thermal noise
- Display the inclination angle of the probe, and the laser indicates the detection position, which is convenient for adjustment
- The host is dustproof and waterproof, not easy to damage
- Handheld, dedicated carrying case, easy to carry
- HD touch screen control, or PC software control
- HD camera display spectrum shooting area
- Direct calculation of vegetation index

Application

- Agriculture, forestry and animal husbandry, geological research, prospecting
- Remote sensing measurement, satellite remote sensing data calibration
- Forest research, oceanographic research
- Environmental damage assessment
- Meteorology, flux stations

Description

ATP9100 handheld hyperspectral ground object spectrometer (field spectroradiometer) is a member of Optosky's high-performance ground object spectrometer family, with a wavelength range of 300~1100 nm, suitable for remote sensing measurement, crop monitoring , forest research to oceanographic research and other fields of application.

In addition to the functions of conventional handheld ground object spectrometers, ATP9100F can also directly and intuitively display the monitored spectrum area in real time, making the experiment more accurate.

ATP9100 ground object spectrometer has the characteristics of high cost performance, fast and accurate measurement, simple operation, and easy to carry. It is equipped with a powerful software package. In addition to reflectance measurement, it can also be used for radiometric, photometric and colorimetric measurements.

Model	Description
ATP9100	Standard Handheld FieldSpec
ATP9100F	plus a function of capture distance & area
ATP9100D	Ultra-low noise, the noise is 7 times lower than ATP9100F, and has all the functions of ATP9100F
ATP9100W	handheld full-band ground spectrometers (field spectroradiometers)

1. ATP9100 Handheld FieldSpec

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2 ATP9100F Handheld FieldSpec (plus capture distance & area)

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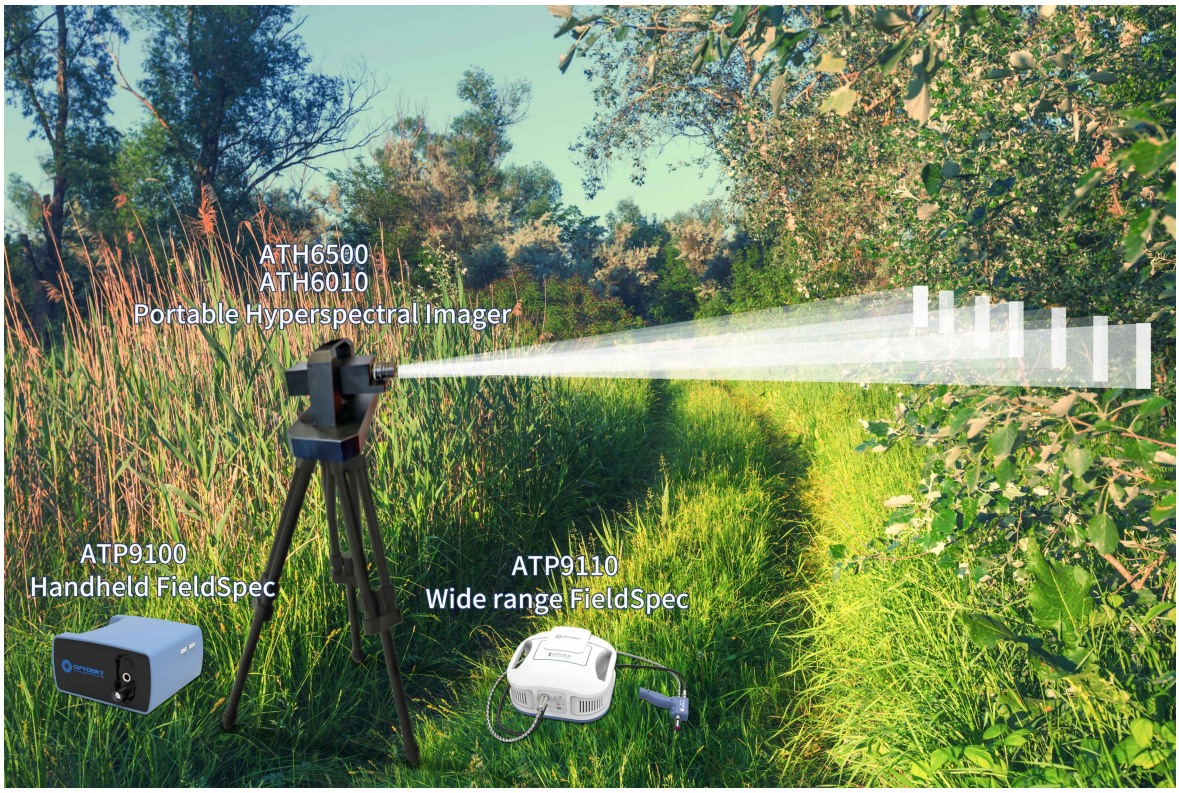

Fig 1 FieldSpec & Hyperspec co work in the field

1. Selection Guide

Model	Feature
ATP9100	Universal type, band range: 300-1100nm
ATP9100-UV	UV version, band range: 190-1100nm
ATP9100F	Can visually display the corresponding area of the spectrum, band range: 300-1100nm
ATP9100F-UV	Can visually display the corresponding area of the spectrum, band range: 190-1100nm
ATP9100D	High signal-to-noise ratio, ultra-low noise, the noise is 7 times lower than ATP9100F, and has all the functions of ATP9100F, band range: 300-1100nm

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ATP9100D-F-UV	High signal-to-noise ratio, ultra-low noise, the noise is 7 times lower than ATP9100F, and has all the functions of ATP9100F, band range: 200-1000nm
ATP9100-17	Wide band, band range: 190-1700nm
ATP9100-25	Wide band, band range: 190-2500nm
ATP9100W-17	300-1700nmband range
ATP9100W-25	300-2500nmband range

2. Performance

	ATP9100&ATP9100F	ATP9100D
Detector		
Type	Linear CMOS sensor	Linear CMOS sensor
Detector	2048	2048
Optical Parameters		
Spectral Range	• ATP9100：300~1100 nm • ATP9100UV：190-1100nm	300~1100 nm
Wavelength Accuracy	± 0.5 nm	± 0.5 nm
Spectral Resolution	1.4 nm@756nm	1.9 nm@756nm
FOV	narrow FOV lens，1°/8°/15°/25° optional	narrow FOV lens，1°/8°/15°/25° optional
Indicate laser wavelength	650 nm	650 nm
Indicate laser power	5 mW	5 mW
SNR	>800：1	>3000:1

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Dynamic Range	>3500:1	>12000:1
Spectral Sampling Interval	0.4nm	0.4nm
Hardware spectral average	Max. up to 100,000 times	Max. up to 100,000 times
Electrical parameters		
Operation system	Android 8.0	
Camera	13-mega front camera	
LCD Screen	5″HD 720*1080 capacitive screen	
Integration Time	1 – 10 s/ auto optimization integration time	
Data Export Port	TYPE-C /USB 2.0, bluebooth	
Angle data	MC3430 gyroscope optical measure angle: 0°-180°	
Power supply	Built-in Li battery 5200maH	
Charging	USB 5V Charger	
Battery life span	>4H	
Working Current	<800mA	
Storage Temp.	-20°C ～ +65°C	
Operating Temp.	-10 ～ 45 °C	
Working Humidity	< 90%RH	
Physical Parameters		
IP level	IP65	
Dimension	151×157×85 mm	
Weight	870g（complete machine）	
Note: 1. The parameters in the table are for reference only; 2. For other performance parameters, Optosky can provide customization;		

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3. FieldSpec Pictures

Fig 2 High-strength drop-resistant field backpack

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3.1 反射率检测

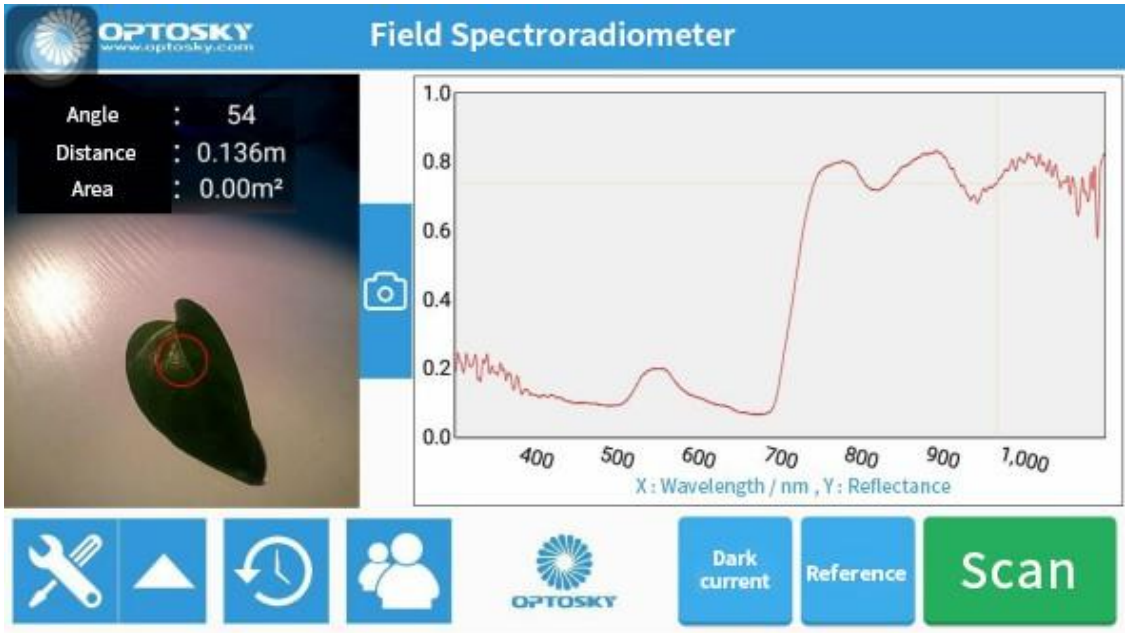

Fig 2 ATP9100F Interface, the left image circled in red triangle, the right reflectance spectrum

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Fig 3 FieldSpec measurement case “Red Tide” on the ship on May 11-16, 2020

Fig 4 ATP9100 FieldSpec measurement case in the field

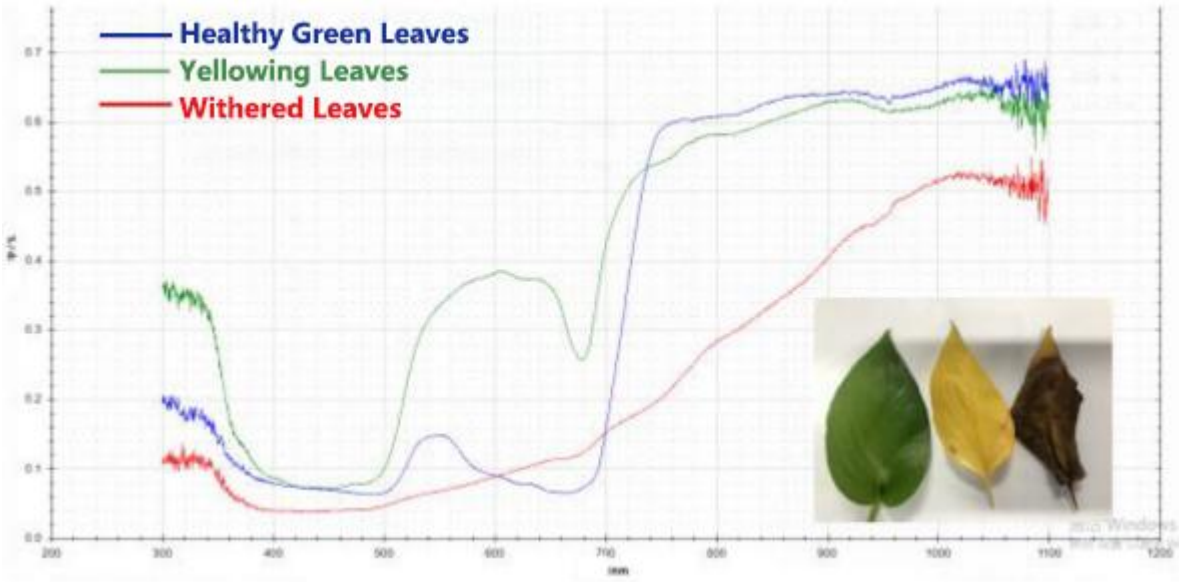

Fig 5 ATP9100 FieldSpec measure Healthy, yellowing and withered leaves

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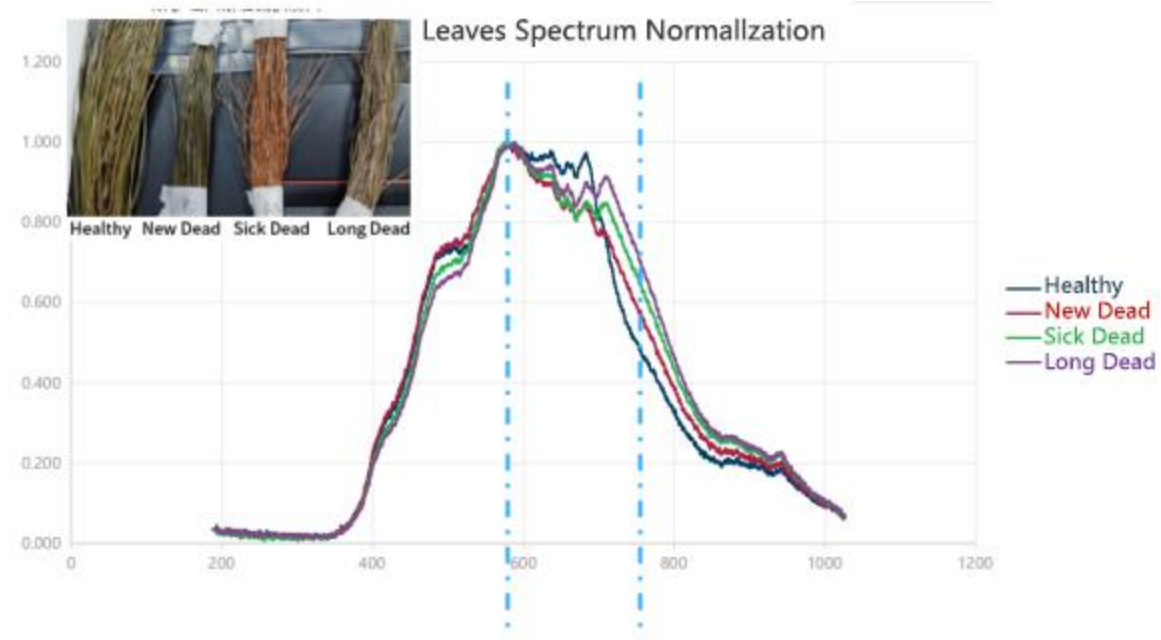

Fig 6 ATP9100 FieldSpec measures Healthy, dead, sick dead, dead long time branches

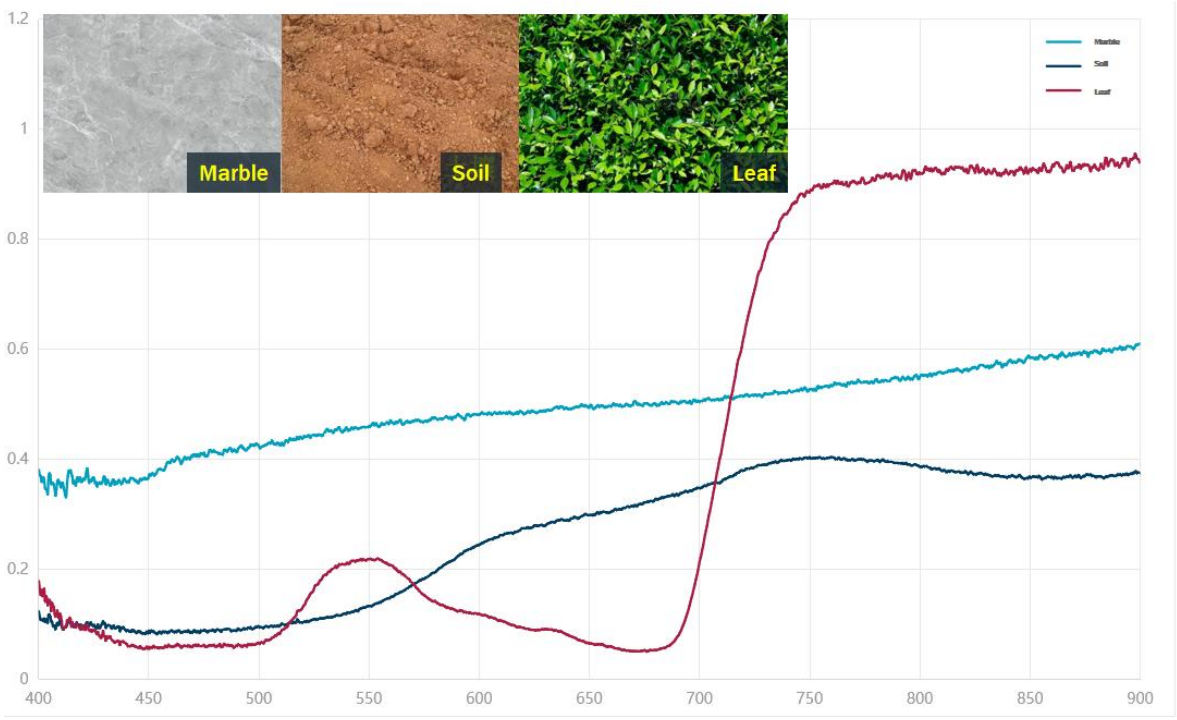

Fig 7 ATP9100 measure marble, soil, and leaves spectra

4. Attachment

Standard Attachment	
1	USB Data wire

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2	Exclusive PC software
3	Charging adaptor 5V/3A
4	Cosine lens
Optional Attachment	
1	FOV lens, 1º/5º/8º/10º/15°/25° Optional
2	Reflection probe (leaf clip), used for vegetation reflectance measurement, used for reflectance measurement, ATP0914 type
4	95% diffuse reflection standard whiteboard (17%, 50%, 70% optional, same price)
5	12V halogen lamp accessories/ATG1021
6	Use of test bracket + integrating sphere to test transmittance
7	Colorimetric pool to test water quality absorbance
8	High-strength drop-resistant field backpack

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