OPTOSKY
Spectroscopy Solutions

Datasheet

Broadband Field Spectrometer (300-11000nm) — ATP9110

Features

- Broad spectral range: 300-11um;
- High sensitivity, detector quantum efficiency reach up to 60%, NIR sensitivity is 40% higher than traditional PDA detector;
- Fast measure speed, one sampling time< 10ms;
- Light weight and flexible optic fiber probe;
- Built-in secondary diffraction coating and filter, high accuracy;
- Dynamic dark current correction, reduce noise;
- Display probe inclined angles, laser indicator indicates probe direction, easy to adjust;
- Portable, special carrying case, easy to carry;
- PC software control mode;

Applications

- Geological research, prospecting
- Remote sensing measurement
- Crop monitoring
- Forest research, oceanographic research

Description

ATP9110 series broadband field spectroradiometer is a new portable hyperspectral fieldSpec from Optosky. Wavelength range of 300-11000 nm, suitable for geological research, mineral exploration, remote sensing, crop monitoring, forest research, oceanography and other fields of application.

ATP9110 field spectroradiometer employs high performance, fast and accurate measurement, easy to operate and held etc. It's configured powerful software package, and applied to measurement of reflectance, radiometry, photometry and colorimetry.

Model	Description
ATP9110-25	Fair resolution 300-2500nm FieldSpec
ATP9110-25H	High resolution 300-2500nm FieldSpec
ATP9110-17	High resolution 300-1700nm FieldSpec
ATP9110-50	300-5000nm Ultra wide band FieldSpec
ATP9110-110	300-11μm Ultra wide band FieldSpec (Without 5-5.5μm)
ATP9110TP	7 "capacitive touch screen, Android operating system, with memory, can store 100,000 spectrum

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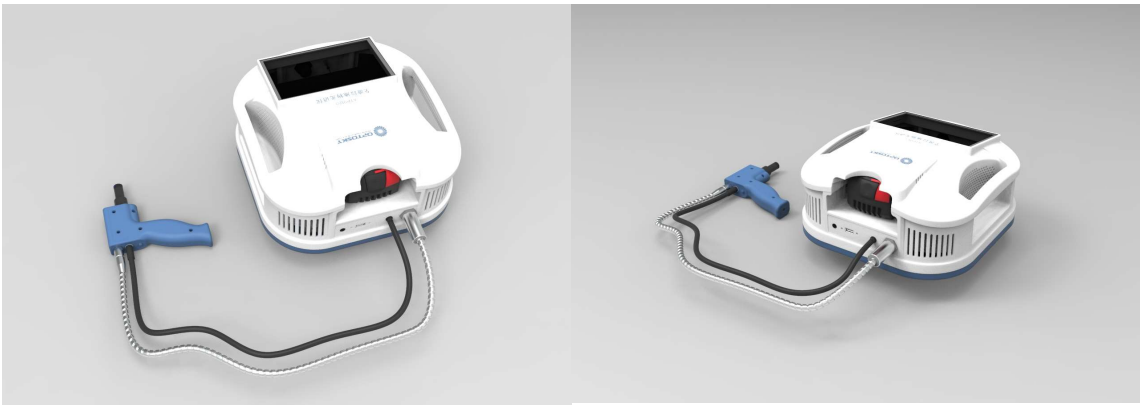

ATP9110TP

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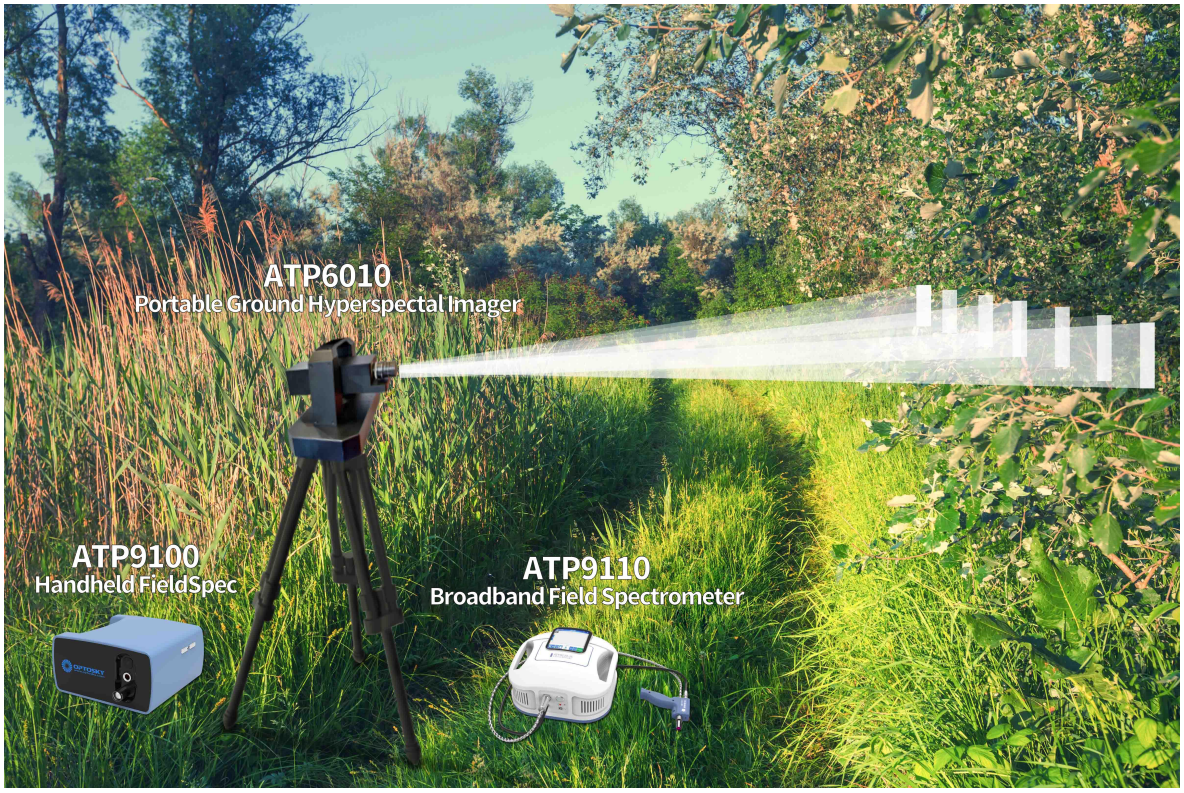

Technical Specification:

Detector	
Type	Linear CMOS detector / InGaAs detector
Detector	300-1100nm: CM0S 2048 pixels 1100-1700nm: InGaAs TE 2nd class cooling 1100-2500nm: InGaAs TE 2nd class cooling 2.5-11μm: Pyroelectric linear array sensor (ZnSe)
Optical Config	

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Models	ATP9110-25	ATP9110-25H	ATP9110-17	ATP9110-50	ATP9110-110
Spectral Range	300-2500 nm		300-1700 nm	300-5000nm	300-11,000nm
Spectral Resolution	0.8-1.4nm@756nm 8-12nm@1400&2100nm	0.8-1.4nm@756nm 3-5nm@1400nm 5-8nm@2100 nm	0.8-1.4nm@756nm 3-5nm@1400nm	0.8-1.4nm @ 756nm 7-12nm @ 1400&2100nm 30nm @ 2.5-5um 50um @ 5.5-11um (Only use in ATP9110-110)	
Wavelength Repeatability	± 0.1nm@ VIS ± 0.5nm @ SWIR ±3nm @ MWIR				
Wavelength Accuracy	± 0.5nm @ VIS; ±1.1nm @SWIR; ± 5nm @ MWIR				
Input	1.5m fiber beam (25°FOV） ， optional front camera change FOV, optional fiber lengths.				
FOV	Small FOV , optional 1°/8°/15°/25°				
Indicate laser wavelength	650 nm				
Indicate laser power	5 mW				
Max radiation	VNIR 2 times sun light/SWIR 10 times sun light				
SNR	300-1000nm: >800, 1000-2500nm: >16000				
Spectral sampling interval	Visible light：0.4nm, SWIR：2.9 nm	Visible light：0.4nm, SWIR：1.4 nm	Visible light：0.4nm, SWIR：1.4 nm	Visible light：0.4nm, SWIR：1.0 nm MWIR：25nm	
Hardware spectral average	Max. up to 100, 000 times				

Electrical Parameter	ATP9110	ATP9110TP
Integration time	1 – 10 s/ auto optimized integration time	
OS	-	Android 6.0
Touch Panel	-	7 -inch , capacitive touch screen
Interface	USB 2.0、Bluetooth、WIFI available	USB 2.0、Bluetooth、WIFI available
Location	Built-in GPS positioning	
Angle data	MC3430 optical gyroscope angles range 0°-180°	
Power Supply	Built-in Li battery 10000maH, optional external 12V power supply/ car loaded power supply	
Charging port	12V/3A Charging (also power supply)	
Battery span	>3H（outdoor）,Battery replaceable	>2.7H（outdoor）,Battery replaceable

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Maximum working current	ATP9110-17: 2.5 A ATP9110-25: 3.5 A ATP9110-25H: 5.0 A ATP9110-50: 4.0 A ATP9110-110: 5.0 A	ATP9110TP-17: 3.5 A ATP9110TP-25: 4.5 A ATP9110TP-25H: 6.0 A ATP9110TP-50: 5.0 A ATP9110TP-110: 6.0 A
Storage Temp.	-20°C ~ +65°C	
Operating Temp.	-20 ~ 50 °C	-10 ~ 50 °C
Working humidity	< 90%RH	

Physical Parameter					
IP grade	IP54				
Size	290×260×141mm	410×260×280mm	290×260×141mm	290x260x141 mm	410x260x280mm
Weight	4.5Kg	6.5Kg	4.5Kg	5.2Kg	5.8Kg

Standard Accessories:

Standard Accessories	
1	USB wires
2	Outdoor fiber
3	Exclusive PC software
4	Charging adaptor 12V/5A
5	Cosine angle lens
6	External battery pack 14.4V
7	External battery pack charger
8	Field Angle lens 25°
9	Standard white plate 10 x 10cm; 95% reflectivity
10	Suitcase
Optional Accessories	
1	FOV angles， optional 1°/5°/8°/10°/15°/25°
2	Leave clip, vegetation reflectance measure tool
3	Indoor lighting
4	Halogen lamp accessories/ATG1021 INT:12V
5	Measure test stand + integration sphere measure transmittance tool
6	Standard white plate 10 x 10cm; 99% reflectivity (Customized)
7	Standard white plate 10 x 10cm; 60% reflectivity (Customized)

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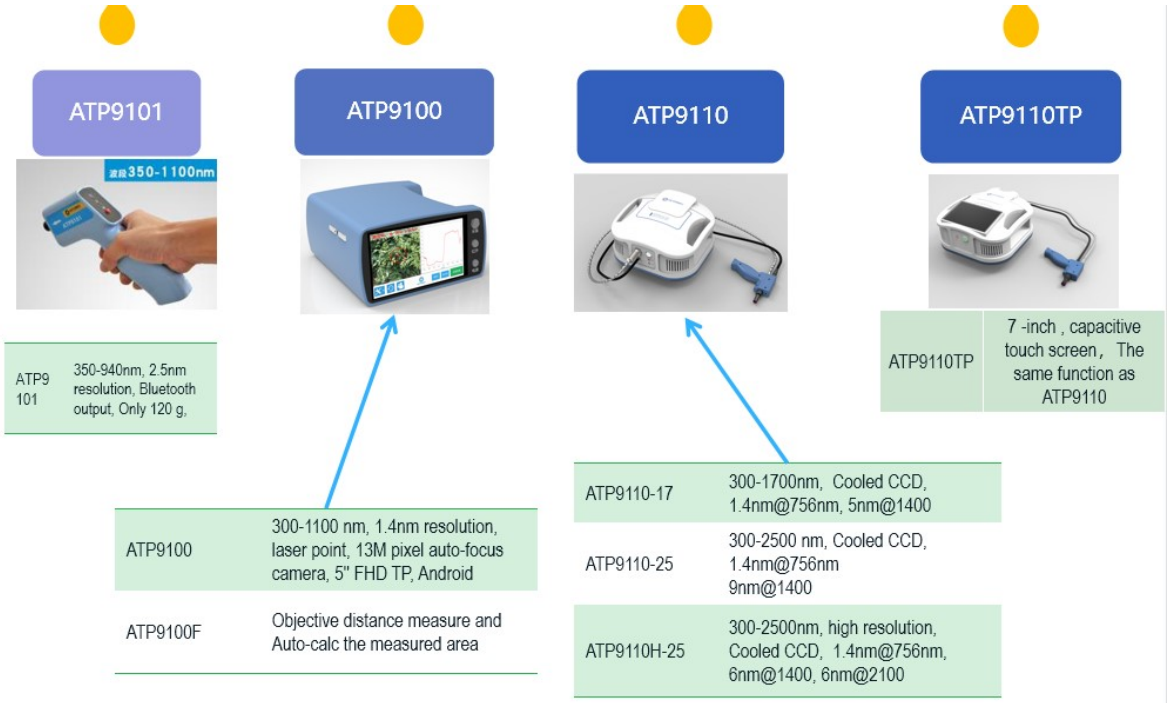
Airborne field spectroradiometer Remote sensing system

Field spectrometer series products:



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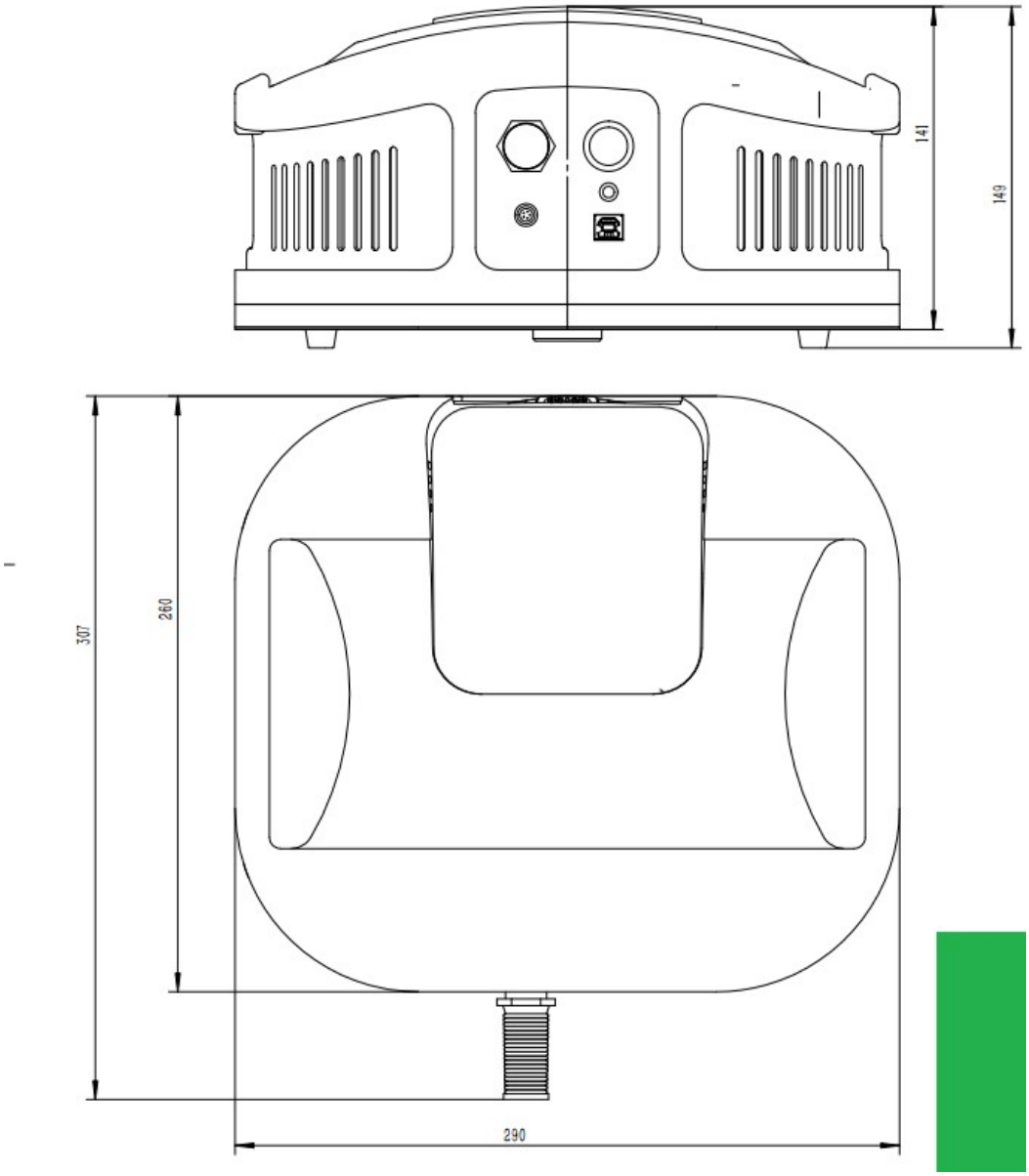

FIG. 1 External dimensions of ATP9110

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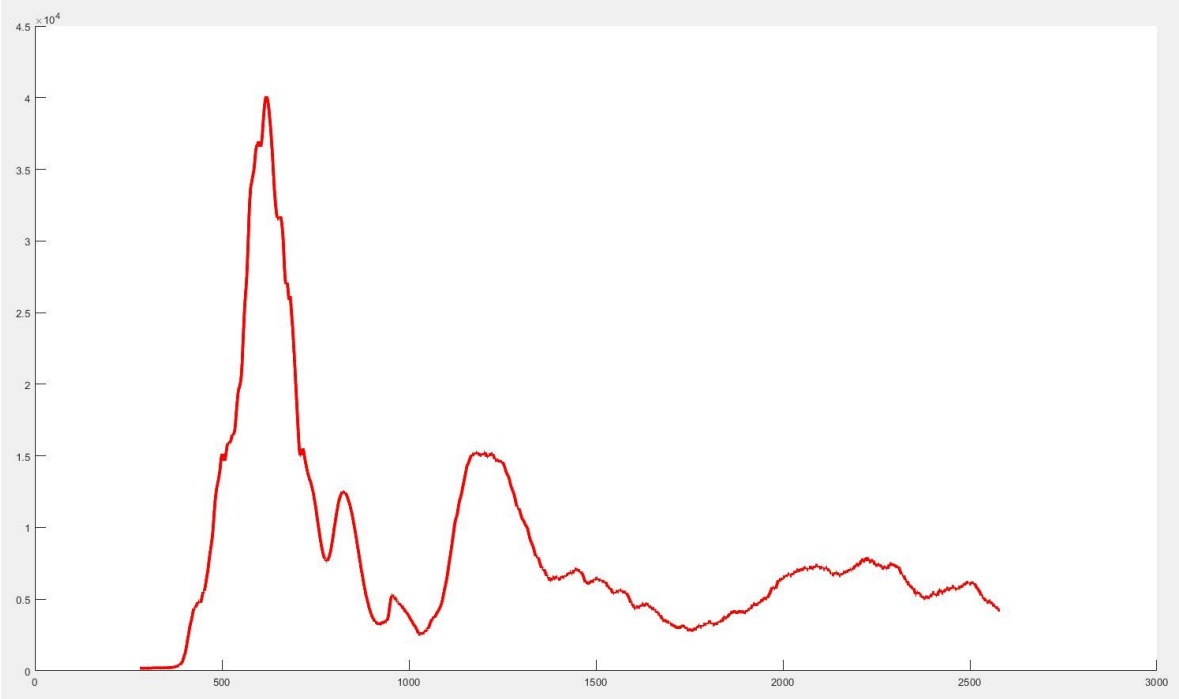

FIG. 2 Halogen light spectrum measured by ATP9110-25 (simulated solar spectrum)

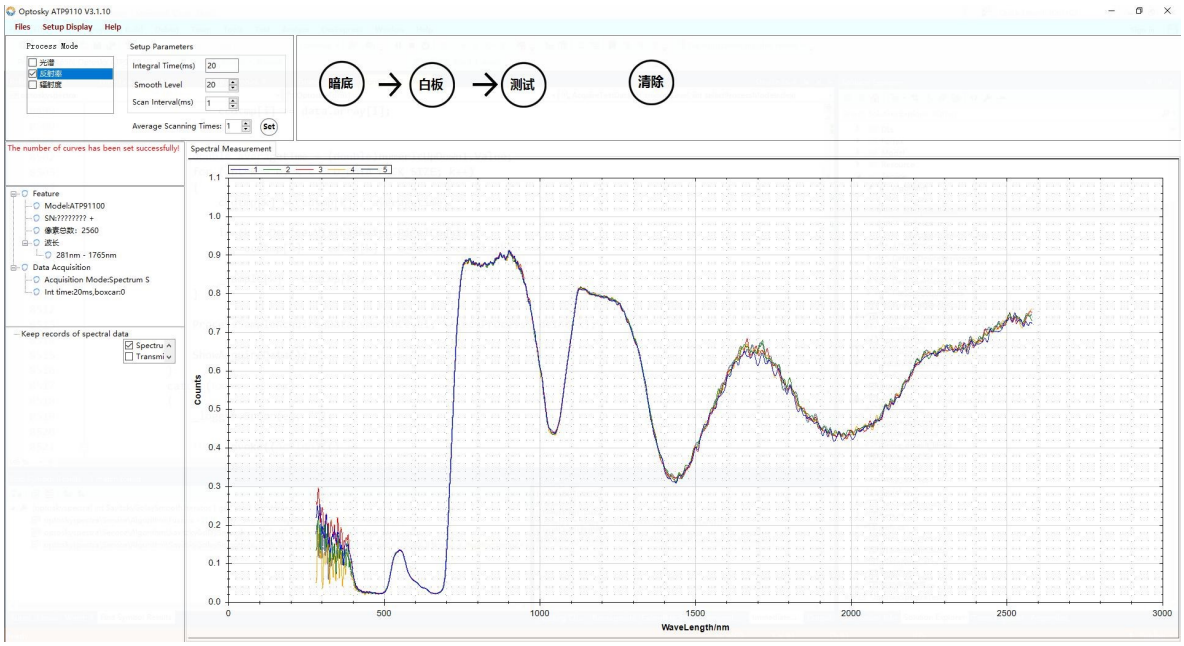

Fig. 3 Reflection spectrum of green leaves measured by ATP9110-25 (5 repeated measurements)

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Company Profile

Optosky company is a first-class spectroscopy solution provider, with the headquarter locates in the 7th floor of the research institute of the Chinese Academic of Science at an area of 2500 square meter in Xiamen city where successfully held the international 9th BRICK summit in 2017.The subsidiary company locates in Wuhu city with an area of 2035 square meters.

The company founder Dr.Hongfei,Liu graduated Docter degree from the Chinese Academic of Science and postdoctoral degree from Xiamen University, by integrating both of top Universities' spectroscopy technology background into Optosky company aiming at developing the leading spectroscopy equipment in the world.

The company bases on unique technologies of Optomechatronics, Spectroscopy Analysis, Process Weak Optical and Electrical Signals, Cloud Computing, and have been developed wide products line of the competitive Raman spectroscopy instruments, micro spectrometer, hyperspectral imager, field spectroradiometer, fluorescence spectroscopy, LIBS etc. Driven by advanced technologies and products, Optosky brand has been well-known to customers all over the world.

Optosky company base on technology innovation, market-driven direction, customer first, provides first-class products and services, and one-stop solutions to many fortune 500 companies in many industries. The company received praise from different industry companies, as well as many innovative intellectual properties, software copyright, qualification certification, and winner awards over hundred numbers.

Optosky receives top class A introduced the high-tech company to international Xiamen city, the national high-tech and new innovative technology company award. The founder Dr.Hongfei Liu receives the innovation talent award by the ministry of science and technology.

The company is currently conducting the exclusive project of major industrialization national oceanic administration with a total fund of five million us dollars. The company in charge of drafting national industry standard of VNIR and SWNIR Field Spectroradiometer, and six national standard drafters, including China National Standard Drafter for Hazmat detector based on Raman spectroscopy, China National Standard Drafter for Buoy-type Monitor eco-environment, China National Standard Drafter for water quality monitor in the unmanned boat, China National Standards drafter for online water quality monitor by spectroscopy, China National Standard Drafter for UV-absorbent measure fabrics.

The company has over 70 IPs and over 20 innovative patents.

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The company received ISO9001:2015 certification, CE certification, Police Administration Certification, FDA approval compliant, IQOQPQ compliant.

Figure 1 Optosky (Xiamen) Photonics Inc. Company Headquarter

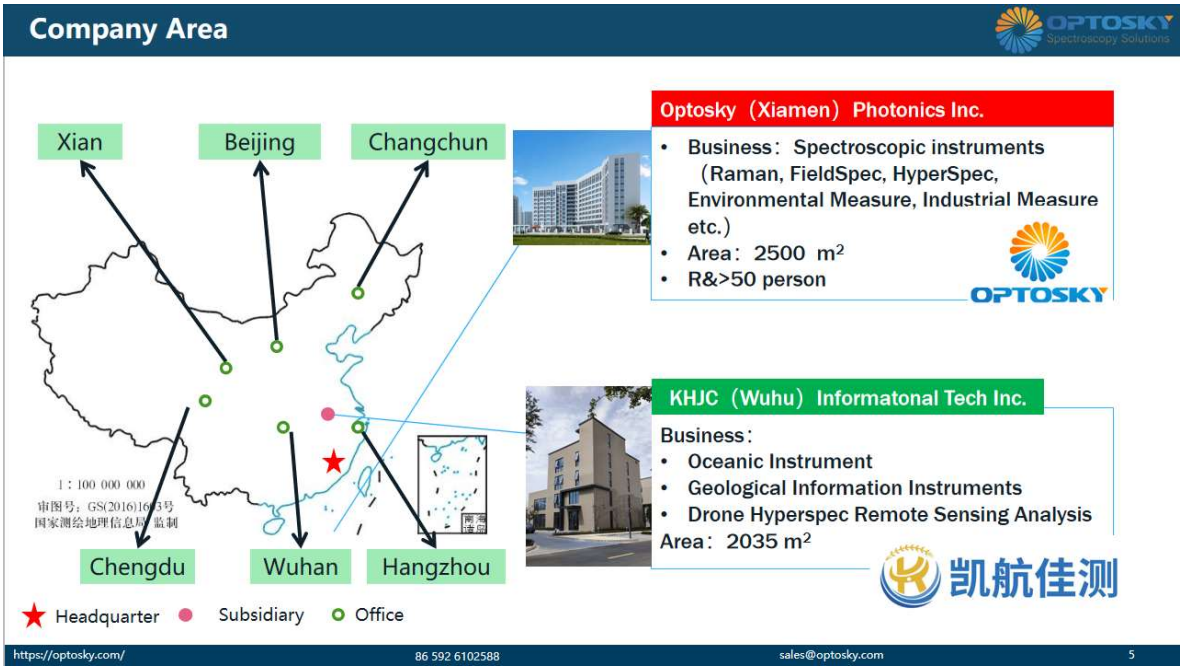

Figure 2 Optosky Company Area

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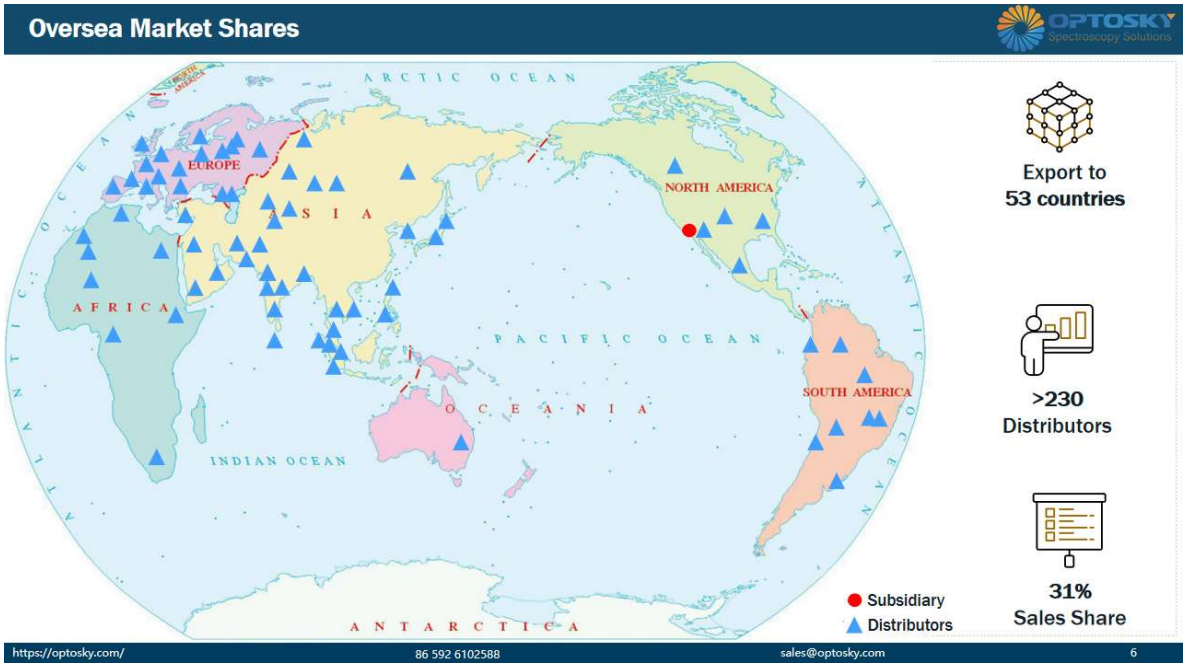

Figure 3 Oversea Market Shares

Figure 4 Optosky Chair and Draft National Standards Lists.

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Figure 5 Qualification

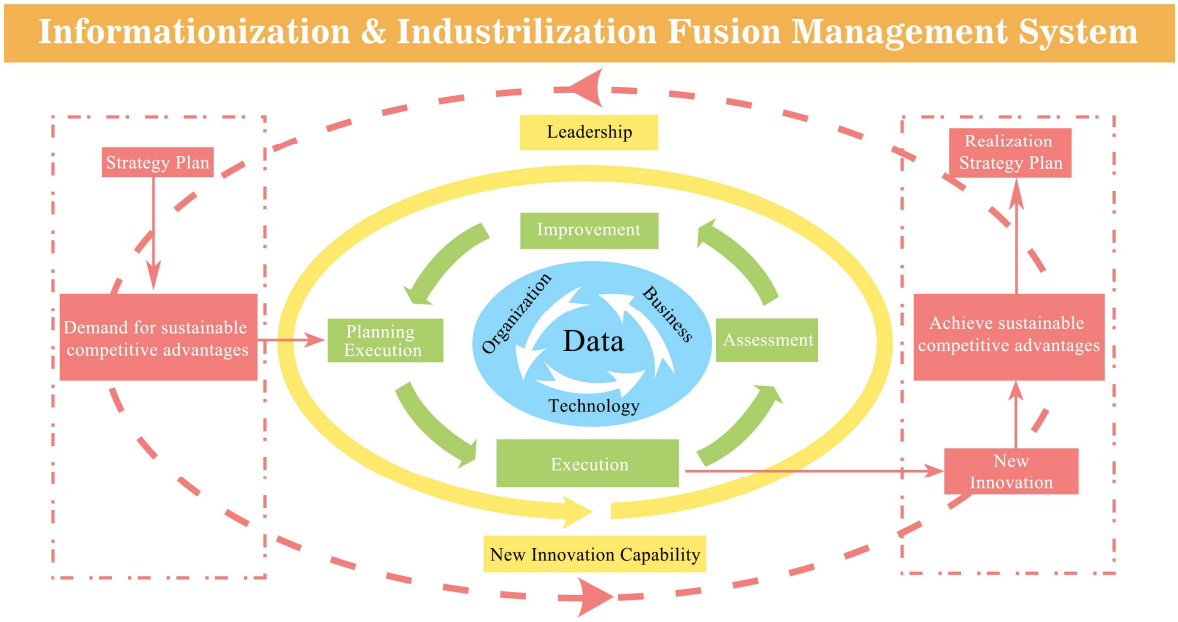

Figure 6 GB/T 23001_Informationization & Industrilization Fusion Management System

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Figure 7 Optosky's Co-founder_Dr. Hongfei Liu

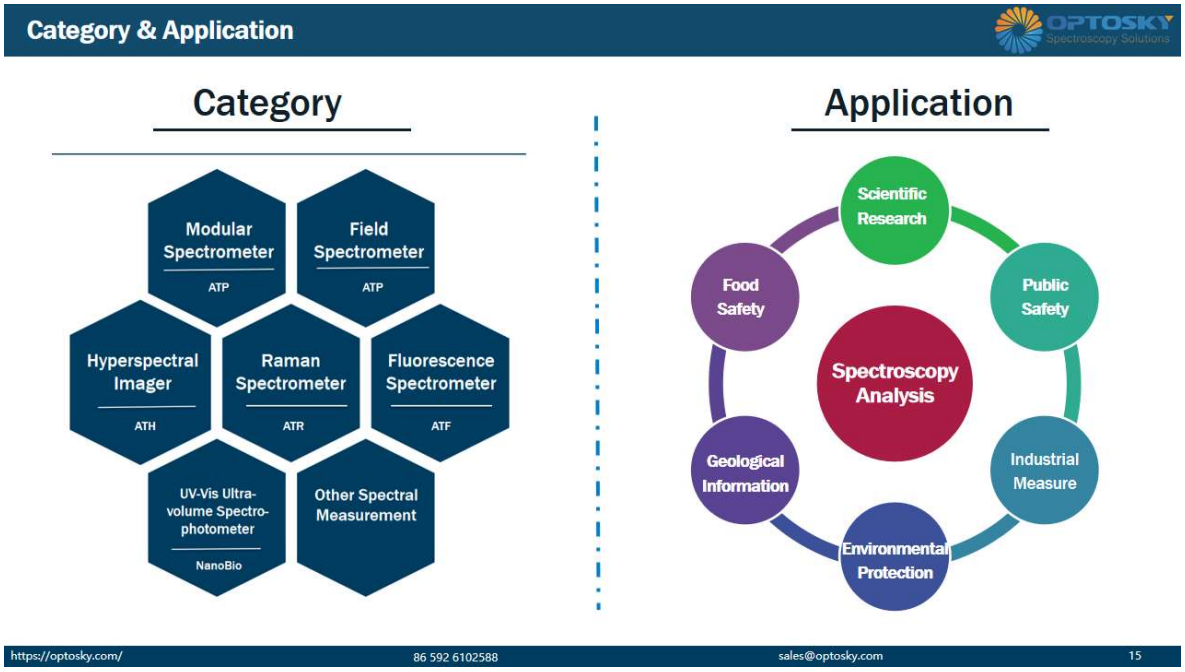

Figure 8 Category & Application

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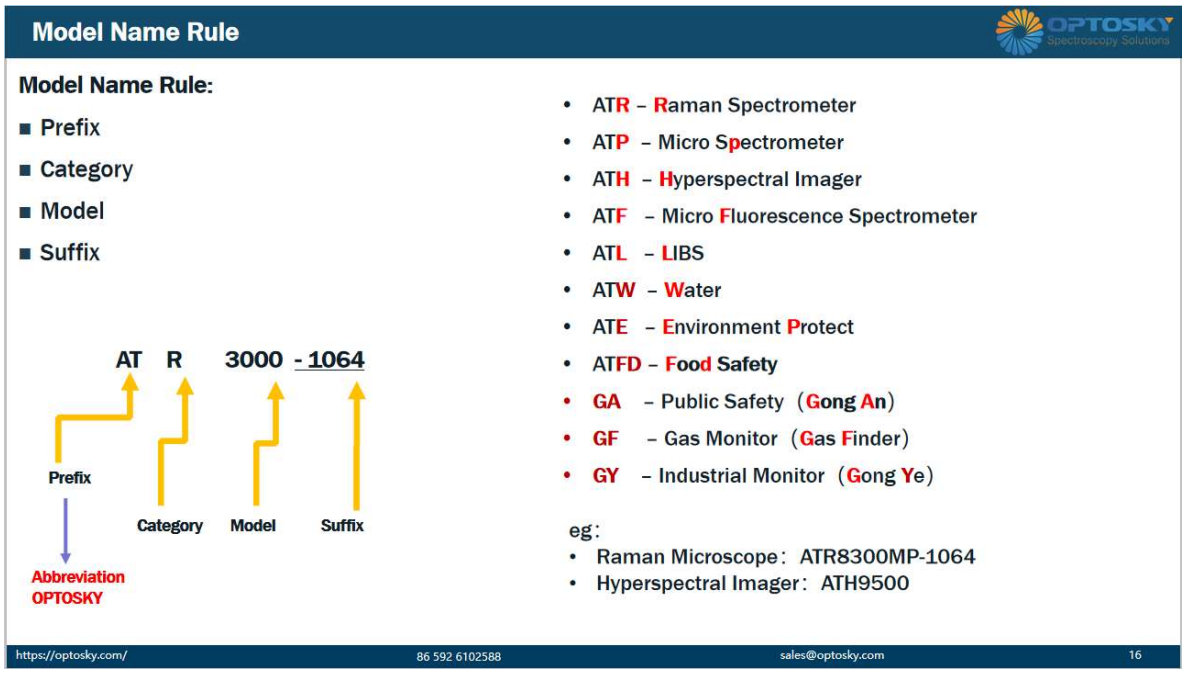

Figure 9 Model Name Rule

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