AISA SYSTEMS

SPECIM

SPECTRAL IMAGING

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AISA SYSTEMS

SPECIM's AISA systems are state-of-the-art airborne hyperspectral imaging solutions covering the VNIR, NIR, SWIR and LWIR spectral ranges. The sensors unbeatable performance has established AISA as the market leader in the airborne hyperspectral imaging industry for a wide range of applications.

RIGHT SOLUTION FOR EACH CUSTOMER NEED

For SPECIM, each customer relationship starts with understanding the customer's need and offering an optimized hyperspectral imaging solution in terms of performance and cost. AISA family includes systems for each spectral region, VNIR, eNIR, SWIR and LWIR, and systems for installation in light weight UAVs to multi-sensor commercial and surveillance aircraft. The sensors' unbeatable performance has established AISA as the market leader in the airborne hyperspectral imaging industry for a wide range of applications.

Whether the final application is forestry, agriculture, geology, emergency response or defense, high quality of the data is what matters. SPECIM's 20 years of experience in building hyperspectral imagers for airborne and field use ensures that the AISA system we deliver produces you the quality of data you need in your applications.

Each AISA system consists of the AISA sensor, GNSS/IMU unit, data acquisition computer, control and operation software, and CaliGeoPRO pre-processing software. With CaliGeoPRO the turnaround time from raw data to radiometrically processed, rectified images is reduced to the minimum. Together with our collaborators, we are able to provide advanced spectral application tools and data fusion solutions, like integration of hyperspectral with Lidar data.
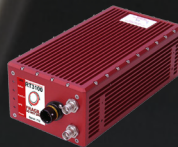
AISA systems are compatible with several GNSS/IMU sensors in order to respond to customers' different requirements for georeferencing accuracy. The supported sensors include Oxford Technical Solutions, Novatel Span, Applanix POS AV, IGI AeroControl and Leica IPAS.
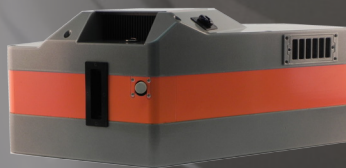
AisaFENIX sensor

Compact Data Acquisition and Power Unit (DPU)

GNSS/IMU sensor

Applications

- Plant mapping and distribution
- Water quality, oil spills
- Geology, mineralogy
- Vegetation health
- Forest inventory
- Archaeology
- Target detection
  - Drug plantations
  - Illegal activities
  - Security and defence threads

AISA Sensors

Sensor	Description
AisaFENIX	VNIR & SWIR Full hyperspectral data in 380 - 2500 nm
AisaFENIX 1K	VNIR & SWIR 1 024 px Full hyperspectral data in 400 -2 500 nm
AisaOWL	LWIR Full hyperspectral data in 7.6 - 12.5 μm
AisaIBIS	VNIR hyperspectral data in 670 -780 nm
AisaKESTREL10	VNIR Full hyperspectral data in 400 - 1000 nm
AisaKESTREL16	eNIR Full hyperspectral data in 600 - 1640 nm

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RAL SENSORS
WORLD

Chemical Composite
Healthy vegetation in green, trees stressed by alkali metals in purple / pink and trees stressed by potassium nitrate and sodium hydroxide in deep red.

Chemical Map
The chemical map depicts target detection results for alkali metals in yellow and, sodium hydroxide in green and potassium nitrate in cyan.

PRECISE CALIBRATIONS, QUALITY ASSURANCE AND CUSTOMER CARE

AISA systems are thoroughly tested and precisely calibrated for their spectral, radiometric and geometric characteristics.

We support our customers at and after the delivery. Our services include installation support and training for the system operation and data processing. Our long term support and maintenance options allow AISA system owners to choose the service that best fits to their needs.

INNOVATIVE TECHNOLOGY AND OPERATIONAL FLEXIBILITY

AISA sensors are based on SPECIM's innovative, proprietary, push-broom type hyperspectral imaging technology that allows acquiring full spectral information of the target, per each pixel, at hundreds of spectral channels, with excellent sensitivity and signal-to-noise ratio (SNR), providing the highest spatial and spectral data quality.

AISA systems include control and operation software that allows data acquisition settings to be easily tailored for individual mission requirements. Parameters such as integration time, frame rate and spectral bands can be easily set. The system parameters can be selected to optimize image acquisition for pixel size, spectral sampling and SNR.

AISA sensors superb performance in a robust and a compact size are the key reason why AISA is preferred by renowned research institutions, commercial enterprises and defense organizations to guarantee the success of their flight missions.
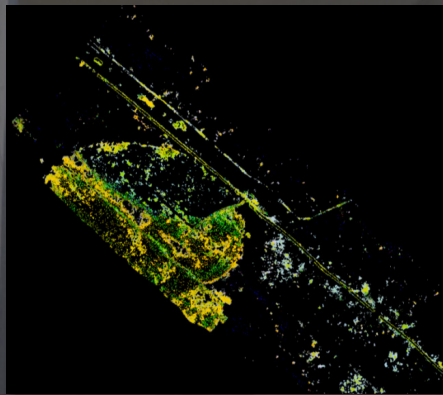
VALUE WITH VERSATILE USABILITY

A special valuable asset for AISA owners is the possibility of using the sensor not only in airborne applications but also in the field and lab, together with SPECIM's scanning solutions.
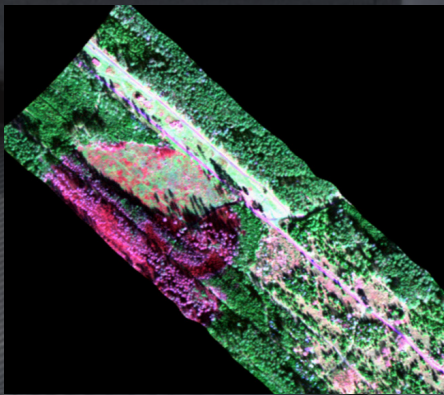
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Specim is a world leading company for hyperspectral imaging instruments, from uv through vnir and swir up to lwir (long wave infrared). Our hyperspectral products are used in an increasing range of demanding applications like color, Process Analytical Technology (pat), life sciences, chemical imaging, military and security.