AHS-160 Airborne Hyperspectral Scanner

80 Coregistered Bands - Full Spectrum

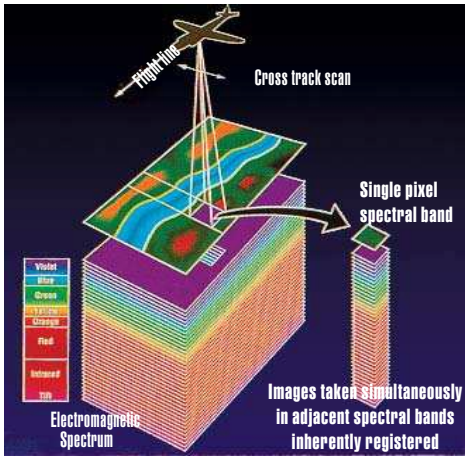
- GIS compatible output
- GPS/INS Position + Orientation System
- Moving Window Image Display

Touch Panel for Operator Control System Offers:

- Automatic system diagnostics; Built-In Test (BIT) on startup
- Simplified user interface with menus providing convenient system set-up and control
- Special mission configuration set-ups can be stored in memory; configuration settings can be loaded on the ground
- System can be controlled by remote computer

The Airborne Hyperspectral Scanner AHS-160 is based on the integration of many advanced technologies developed by Argon ST. Each of the individual items have been delivered and field-tested in operational use.

The AHS-160 incorporates advanced components to ensure high performance while maintaining the ruggedness to provide operational reliability in a survey aircraft. The AHS-160 version uses the full scan aperture for maximum sensitivity performance.



Built-In System Monitors

Data System and Operator Interface

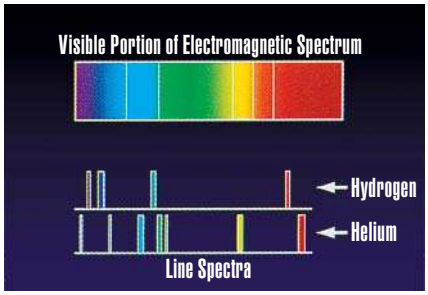
Photos depict one variation of system.

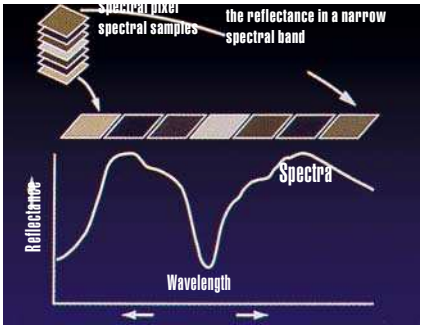
Common Field Stop Optical Design

- Maintains spatial co-registration of all channels

Scan Head and Specctrometer

- 80 spectral bands (or more) sampled simultaneously
- Position / Orientation System and software for GIS compatible image output
- Built-in real-time display and built-in test features
- Operator touch panel control system with easy menus
- 16-bit per pixel dynamic range
- Output compatible with commercial tools, such as ENVI,® ERDAS,® ArcMAP®





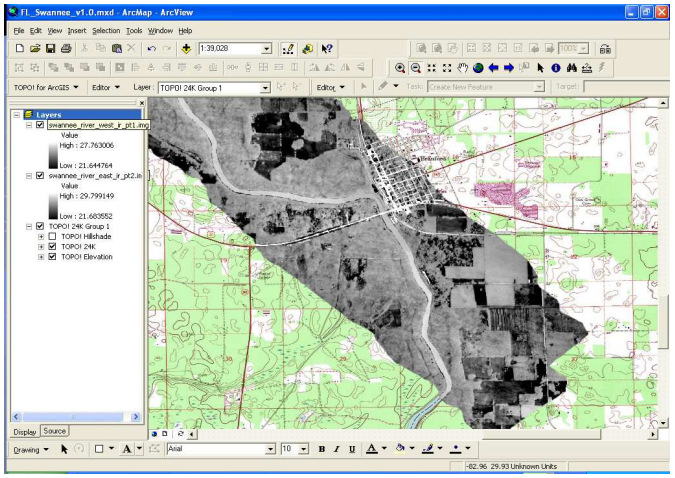
Hyperspectral imagers divide the spectrum into many discrete narrow channels. This fine quantization of spectral information on a pixel by pixel basis enables researchers to discriminate the individual constituents in an area much more effectively. For example, the broad spectral bands of a multispectral sensor allows the user to coarsely discriminate between areas of deciduous and coniferous forest, plowed fields, etc., whereas a hyperspectral imager provides characteristic signatures which can be correlated with specific spectral templates to help determine the individual constituents and possibly even reveal details of the natural processes which are affecting them.

Remote Sensing Technology

AHS-160 Airborne Hyperspectral Scanner

AHS-160 Spectral Bands

Up to 80 bands (or more) recorded.
Spectral band complement typically negotiated with each customer.
Visible/Near IR: Up to 20 bands .45 - 1.05 μm
SWIR: One band 1.6 μm
SWIR: Up to 42 bands 2 - 2.5 μm
MWIR: Up to 7 bands 3 - 5 μm
Long Wave Thermal LWIR: Up to 10 bands 8 - 13 μm
Other combinations are possible.



Two line mosaic of AHS image over base map in a GIS system

OPTIONS

Laboratory support and calibration equipment
Custom spectral bands
Spare parts kit

PHYSICAL SPECIFICATIONS

	Height		*Width*		*Depth**	
	in	***cm***	***in***	***cm***	***in***	***cm***
Scan Head/Spectrometer	26.5	67	20.6	52	28.1	71
Electronics	10.5	27	19	48.3	24	61

	lbs	*kg*
Scan Head Weight (approximate)	220	100
Total System Weight (approximate)	230	105

** Not including connectors and cables*

ENVIRONMENTAL SPECIFICATIONS

Operating Environment

Altitude 15 Km Scan Head
7.5 Km Electronics

Temperature -55 to +50°C Scan Head
5 to 40°C Electronics

Humidity 0.95% Scan Head
20 to 80% Non-condensing Electronics

TECHNICAL SPECIFICATIONS

INSTANTANEOUS FIELD OF VIEW
2.5 milliradians (1.25 mrad optional)

DIGITIZED FIELD OF VIEW – 90°

SCAN RATES
35, 25, 16.7, 12.5, 8.3 (operator selectable)

NAVIGATION INTERFACE
GPS + INS Position + Orientation System built in.
Rapid Mapper geocorrection utility included
Output is north up GIS compatible imagery

POWER REQUIREMENTS
28 ±3 VDC, 35 amps continuous

IMAGE DISPLAY
Continuous moving window on touch screen,

DIGITIZATION PRECISION
16-bit data words ±1 least significant bit

DATA RECORDING
2 hours recording per removable disk

THERMAL REFERENCE SOURCES
Two controllable field-filling blackbody references. Range of -15° to +25°C with respect to scan head heat sink temperature. Also function as zero references for non-thermal bands.

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