AHS-75 Airborne Hyperspectral Scanner

Designed for Lower Altitude, Higher Speed Flight Operations

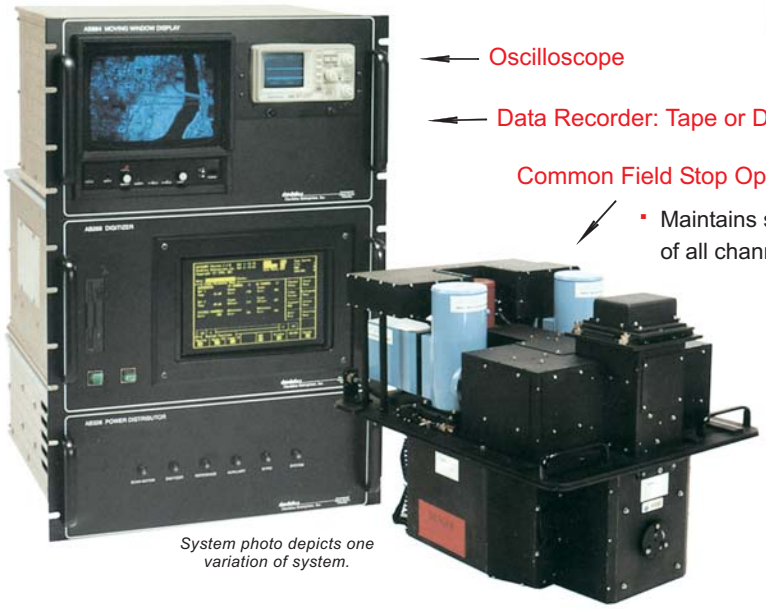
Moving Window Display (MWD)

- To check flight line and overall data quality in flight
- GPS receiver built in
- Simple software update

Touch Panel for Operator Control of 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

Built-In System Monitors

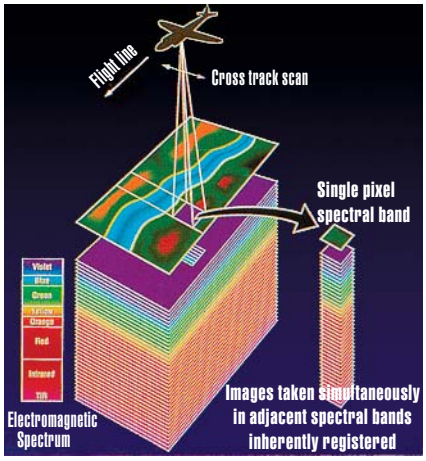


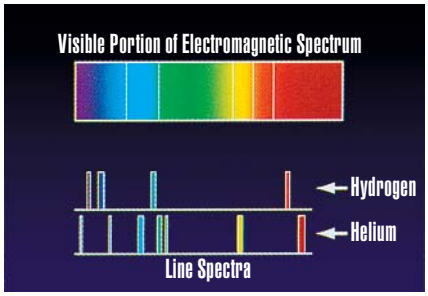
System photo depicts one variation of system.

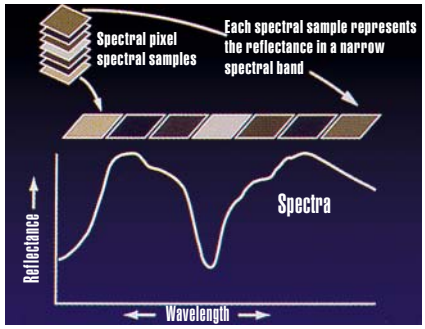
The Airborne Hyperspectral Scanner AHS-75 is based on the integration of many advanced technologies developed by Argon ST. Each of the individual items have been delivered and field-tested in operational use.

The AHS-75 incorporates advanced components to ensure high performance while maintaining the ruggedness to provide operational reliability in a survey aircraft. The AHS-75 version uses the balanced and fast spinning scan mirror which minimizes the size and weight, making aircraft installations easy.

- Up to 64 spectral bands sampled and recorded simultaneously
- Computer compatible 8 mm cartridge data recording or hard disk drive
- Built-in real-time display and built-in test features
- Operator touch panel control system with easy menus
- 12-bit digital resolution
- Data output compatible with ENVI®





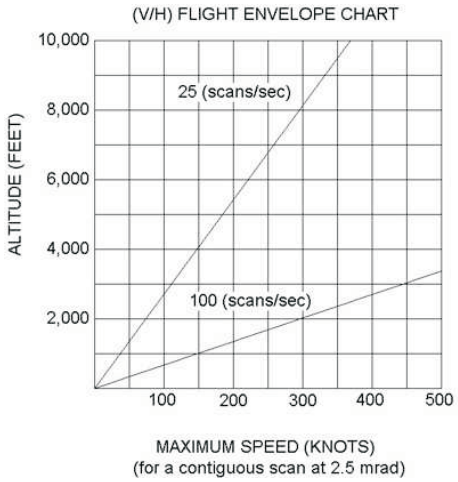


Hyperspectral imagers divide the spectrum into many discrete narrow channels. This fine quantization of spectral information on a pixel by pixel basis enables researchers to discriminate the individual constituents in an area much more effectively. For example, the broad spectral bands of a multispectral sensor allows the user only 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.

AHS-75 Airborne Hyperspectral Scanner

AHS-75 Spectral Bands

Up to 64 bands recorded.
Spectral band complement typically negotiated with each customer.
Visible/Near IR: Up to 20 bands .45 - 1.05 μm
Mid IR: One band: 1.6 μm
Mid IR: Up to 16 bands 2 - 2.5 μm
Medium Wave IR: Up to 7 bands 3 - 5 μm
Long Wave Thermal IR: Up to 6 bands 8 - 13 μm
Other combinations are possible.



OPTIONS

Position and Orientation Sensor

Vacuum Pumping Station

Optical Test Bench

Custom spectral band options can be negotiated.

PHYSICAL SPECIFICATIONS

	Height		*Width*		*Depth**	
	in	*cm*	*in*	*cm*	*in*	*cm*
Scan Head/Spectrometer	26.5	67	18	46	24	60
Electronics	35	89	19	48	25	64

	lbs	*kg*
Scan Head Weight (approx.)	145	68
Total System Weight (approx.)	350	160

** Not including connectors and cables*

ENVIRONMENTAL SPECIFICATIONS

Operating Environment

Altitude 15 Km Scan Head
7.5 Km Electronics, MWD turns off @ 4.6 Km

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 mrads optional)

DIGITIZED FIELD OF VIEW – 86°

SCAN RATES
100, 50, 25, 12.5, 6.25 (operator selectable)

ROLL CORRECTION
±15° of roll correction (automatic)

POWER REQUIREMENTS
28 ±3 VDC, 50 amps continuous

IMAGE DISPLAY
9" CRT continuous moving window,
RS-170/CCIR output

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

DATA RECORDING
8 mm Exabyte Mammoth-2 or removable disk drive

THERMAL REFERENCE SOURCES
Two controllable field-filling blackbody reference sources. Range of -15° to +25°C with respect to scan head heat sink temperature.

NAVIGATION INTERFACE
GPS receiver is built in. Date, time, ground speed, latitude, longitude are recorded with image data.

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