ATM **Enhanced** *Airborne Thematic Mapper*

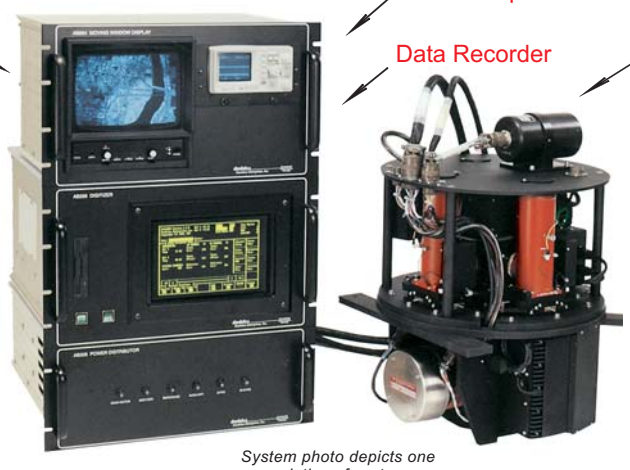
Built-In System Monitors

Moving Window Display (MWD)

- To check flight line and overall data quality in flight

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 which can be stored in memory; configuration settings can be loaded on the ground
- Histogram display for relative energy distribution, easier system monitoring and control



System photo depicts one variation of system.

External Data Inputs and Outputs

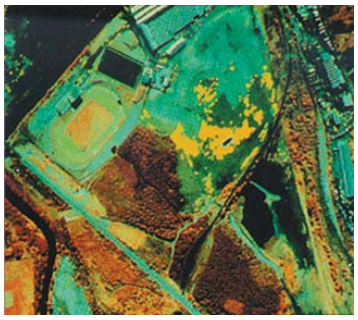
- GPS data
- Simplified software updates
- Output MWD data to hardcopy printer or video recorder in real-time

Common Field Stop Optical Design

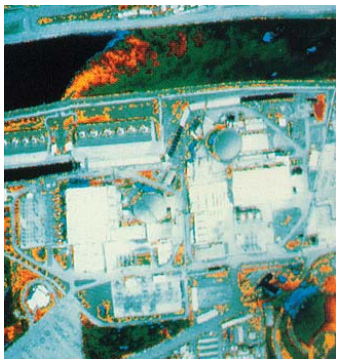
- Maintains spatial co-registration of all channels
- Interchangeable field stop optical assembly to change instantaneous field of view

- Computer compatible 8 mm cartridge or removable disk data recording
- Built-in real-time display and built-in test features
- Operator touch panel control system with easy menus
- 12-bit digital resolution and built-in GPS receiver
- Spectral match with all Thematic Mapper Satellite bands plus 4 additional spectral bands
- Optional spectral configuration with CZCS/SeaWiFS array and ultraviolet
- Data readable by ERDAS Imagine®

Argon ST offers the enhanced configuration of the world's most widely used airborne multispectral scanner. Enhancements include a touch panel control system and 12-bit digital resolution which increase system flexibility and ease-of-use. The cartridge tape recorder simplifies the task of processing multispectral data sets. Position data from the built-in GPS receiver is inserted in the recorded data stream. This enables the information derived to be geometrically converted and georeferenced for merging with other geographic data.



A combination of IR and visible band (4, 5 & 6) show species/planting chronology differentiation of a wooded area in South Wales, England. *(Courtesy of Hunting Geology & Geophysics Ltd., and Global Earth Sciences, Ltd.)*



Heated water from a nuclear power plant is discharged into a river in Belgium. Using the thermal band, a thermal resolution of 0.5°C is displayed here. *(Courtesy Eurosense, Belgium)*

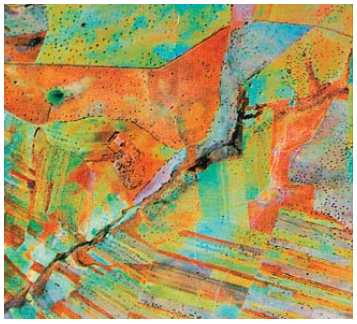


Image of ATM Bands 11, 10 & 4 (red, green and blue respectively) indicates possible lead-zinc silver vein deposits in Spain. *(Courtesy of Hunting Geology & Geophysics Ltd., and Global Earth Sciences, Ltd.)*

argon ST

Imaging Group

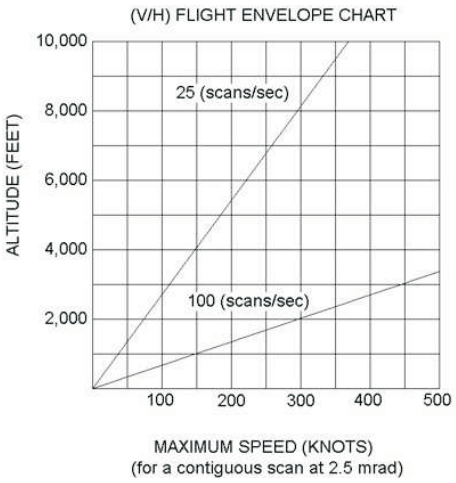
Environmental Remote Sensing Technology

ATM Enhanced Airborne Thematic Mapper

OPTIONAL SPECTRAL CONFIGURATIONS

CHANNEL NUMBER	ATM WAVELENGTH (micrometers)	CZCS/SeaWiFS/UV WAVELENGTH (micrometers)
1	0.42 - 0.45	0.433 - 0.453
2	0.45 - 0.52*	0.480 - 0.500
3	0.52 - 0.60*	0.508 - 0.532
4	0.60 - 0.63	0.543 - 0.577
5	0.63 - 0.69*	0.580 - 0.630
6	0.695 - 0.75	0.638 - 0.702
7	0.76 - 0.90*	0.715 - 0.815
8	0.91 - 1.05	0.830 - 0.940
9	1.55 - 1.85*	1.55 - 1.85
10	2.08 - 2.35*	2.08 - 2.35
11		0.32 - 0.38
12	8.5 - 12.5*	8.5 - 12.5

** Thematic Mapper satellite bands, except thermal band broadened for airborne operation.*



OPTIONS

1.25 mrad Interchangeable Field Stop Assembly (for ATM spectrometer only)

Spectral Bands (alternative detectors and arrays available)

Optical Test Bench

Vacuum Pumping System

Cryo-Cooled Detectors

PHYSICAL SPECIFICATIONS

	Height		*Width*		*Depth**	
	in	***cm***	***in***	***cm***	***in***	***cm***
Scan Head	18.0*	45.7	16.0	40.6	16.0	40.6
Electronics	28.0	71.2	19.0	48.3	20.0*	50.8

	lbs	*kg*
Scan Head Weight	100	46
Total System Weight (approx.)	250	114

** Not including connectors and cables*

ENVIRONMENTAL SPECIFICATIONS

	Temperature	*Rel. Humidity (non-condensing)*	*Altitude*
Scan Head (operating)	-55° to +70°C	0 - 95%	50,000 ft (15,200 m)
Electronics (operating)	+5° to +40°C	20 - 80%	25,000 ft* (4,600 m)
Electronics (non-operating)	-40° to +60°C	0 - 95%	50,000 ft (15,200 m)

** Video monitor will automatically switch off above 14,500 ft (4,400 m)*

TECHNICAL SPECIFICATIONS

INSTANTANEOUS FIELD OF VIEW
2.5 milliradians (1.25 mrad optional)

DIGITIZED FIELD OF VIEW – 86°

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

ROLL CORRECTION
±15° of roll correction (automatic)

AUTOMATIC MEASUREMENT AND RECORDING OF AIRCRAFT ROLL AND PITCH ATTITUDE

POWER REQUIREMENTS
28 ± 3 VDC, 35 amps continuous

IMAGE DISPLAY
640 pixels wide in continuous moving window, RS-170/CCIR output

DIGITIZATION PRECISION
12-bit data words

DATA RECORDING
8 mm Exabyte Mammoth or removable disk

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

GPS RECEIVER
A GPS receiver is integral to the system. Date, time, ground speed, latitude, longitude and track angle are recorded on the system data tape.

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Imaging Group
P.O. Box 1869
Ann Arbor, MI 48106-1869 USA
(734) 769-5649 FAX (734) 769-0429

www.argonst.com

Corporate Headquarters
12701 Fair Lakes Circle, Suite 800, Fairfax, VA 22033
Phone (703) 322-0881 FAX (703) 322-0885