

Real Time Mapping AMS

DaedalusScanners Multispectral Scanner - AA3607DS

The utility and the feature set for one of our workhorse imaging systems has been further broadened. The basic AMS is a dual optical port multispectral scanner which records up to 16 spectral bands simultaneously onto a removable disk. Relative to the standard AMS, this version is optimized for higher spatial resolution (1.25 mrad IFOV or higher), has six new spectral bands, a high capacity data system and geo-corrected output imagery.

These improved features are also available as an upgrade for existing AMS, ABS or ATM owners wishing to modernize and improve the capability of their system

The new system integrates a GPS/INS subsystem and enhanced processing power. Specially developed software uses the position and attitude measurements and the DEM to geocode each pixel to map coordinates, thus producing GIS compatible imagery. Corrected compatible imagery is available upon landing the aircraft. Uncorrected "raw" sensor data is also recorded. Optional accessories permit the imagery to be radio or satellite linked in real time to a ground workstation where it is superimposed onto a standard base map image. Additional tools are provided to enable post processing of the raw recorded data in cases where immediate results are not required. Post processing also increases the accuracy of the geo-located images.

Like the standard AMS, the improved new version provides calibrated thermal outputs for the determination of radiometric temperature relationships for a variety of remote sensing applications. The compact scan head and electronics can be installed in a wide range of aircraft using standard aerial camera ports and seat assemblies. The sensor configuration includes a dual element thermal infrared detector and a 14-band, visible/near-infrared spectrometer so that a total of 16 spectral bands are available. Any or all of these bands may be selected for recording by the operator without restrictions.

The system's built-in test capability delivers a high level of confidence in mission success. An on-board image display provides a real-time check of flight line coverage and data quality. The AMS provides continuous status monitoring and operator control via a menu-driven touch screen.

Now with 16 spectral bands, 1.25 mrad spatial resolution, compact data system and Geo-corrected output.

The AMS collects data for applications as diverse as:

Strategic intelligence

Geologic mapping

Forest inventory

Fire mapping

Oil spill detection/mapping

Water chlorophyll studies

And many more.



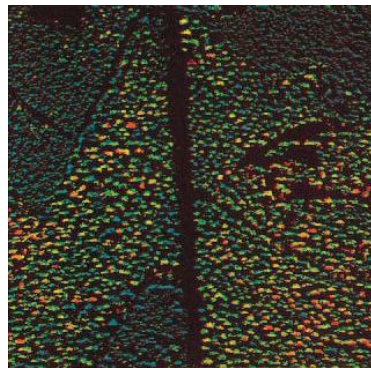
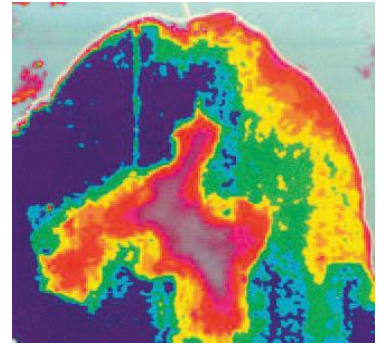
Scan Head



Data System

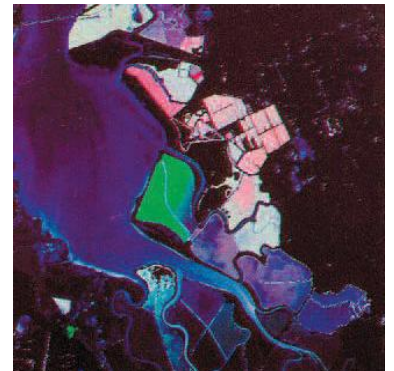
photo depicts one variation of system.

Bay Environment Study shows sea water pollution, suspended solids and chlorophyll conditions. (Courtesy Asia Air Survey Company, Ltd., Japan)



Air Rain Study of a forest area shows degradation of healthy trees over a one year period. Red dots are dead trees. (Courtesy Eurosense, Belgium)

Imagery of waste settling ponds in the San Francisco Bay area shows dramatic differences in spectral signatures. Diked ponds, some of which are used for industrial processing wastes, require airborne monitoring to detect leakage. (Courtesy of NASA/Ames Research Center) NASA does not endorse any commercial product.

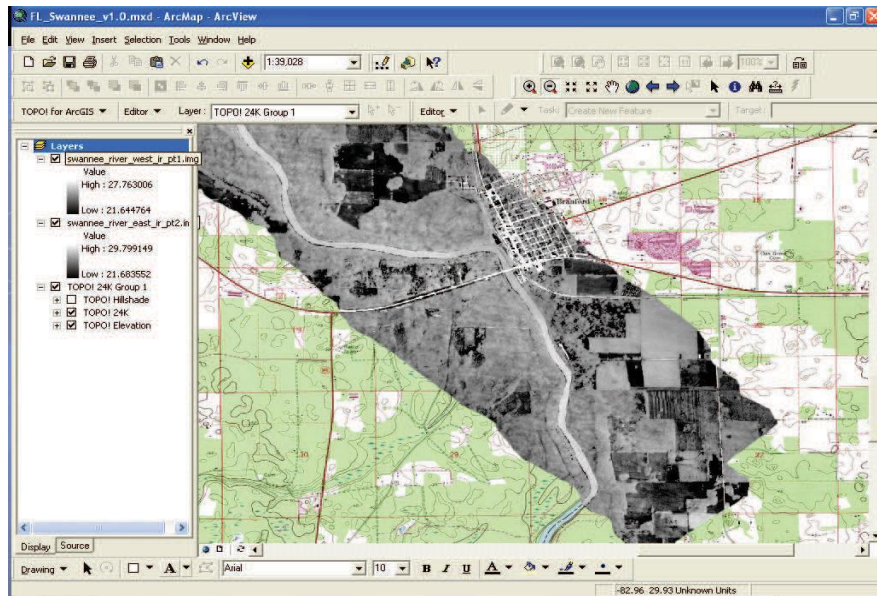


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PARTIAL LISTING OF APPLICATIONS:	SPECTRAL BANDS																	
	VIS/NIR Spectrometer Channels														MWIR	LWIR		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
Geologic Mapping		X			X			X	X		X		X	X	X			X
Water Chlorophyll	X	X		X	X	X								X				X
Water Suspended Sediment			X	X			X	X	X	X			X					X
H ₂ O Temp-Spring/Seep Detection													X					X
Water Algae	X		X	X	X	X	X			X		X						X
Forest Inventory		X	X	X				X	X	X	X	X	X	X				X
Crop Vigor Studies		X	X	X			X	X	X		X	X	X					X
Fire Detection/Mapping																	X	X
Oil Spill Detection/Mapping	X																X	X

The AMS collects data for applications as diverse as geologic mapping, forest inventory, fire mapping, oil spill detection/mapping, water chlorophyll studies and many more. Examples of typical applications and their recommended spectral combinations are depicted in the chart above. **Strategic intelligence applications may use all bands.**

Bands	Band Edges	
1	0.43 - 0.45 μ m	Visible
2	0.48 - 0.50 μ m	
3	0.50 - 0.52 μ m	
4	0.52 - 0.54 μ m	
5	0.54 - 0.56 μ m	
6	0.56 - 0.58 μ m	
7	0.58 - 0.61 μ m	Near Infrared
8	0.61 - 0.64 μ m	
9	0.65 - 0.68 μ m	
10	0.68 - 0.72 μ m	
11	0.72 - 0.78 μ m	Thermal Infrared
12	0.78 - 0.84 μ m	
13	0.84 - 0.92 μ m	
14	0.97 - 1.05 μ m	
15 MWIR	3.0 - 5.4 μ m	
16 LWIR	8.5 - 12.5 μ m	



Two line mosaic of IR AMS image over base map in GIS system

OPTIONS

IR Detector C ry o-Cooling or Liquid Nitrogen cooled
Installation assistance – spares, maintenance and calibration accessories

PHYSICAL

	Height		Width		Depth*	
	in	cm	in	cm	in	cm
Scan Head	15.0	38.0	15.0	38.0	15.0	38.0
Electronics	10.5	26.7	20.0	50.8	20.0	50.8
Total System Weight (approx.)			lbs	kg		
			125	57		

* Depth not including connectors and cables

ENVIRONMENTAL

	Temperature	Rel. Humidity (non-condensing)	Altitude
Scan Head Electronics (operating)	-55° to +70°C	0 - 95%	50,000 ft (15,200 m)
Electronics (non-operating)	+5° to +40°C	20 - 80%	25,000 ft* (7,600 m)
Electronics (non-operating)	-40° to +60°C	0 - 95%	50,000 ft (15,200 m)

PERFORMANCE SPECIFICATIONS

INSTANTANEOUS FIELD OF VIEW
1.25 milliradians standard

DIGITIZED FIELD OF VIEW
90° = 1500 scene pixels

SCAN RATES
100, 50, 25, 12.5 scans/sec (operator selectable)

REAL TIME GEO-LOCATION ACCURACY
± 5-10 Pixels for 30 M USGS DEM and DGPS

POST PROCESSED GEO-LOCATION ACCURACY
±5 Pixels for 30 M USGS DEM and DGPS

POWER REQUIREMENTS
28 ±3 VDC, 30 amps maximum

IMAGE DISPLAY
Scrolling moving window on touch screen

DIGITIZATION PRECISION
16-bit per pixel

RECORD TIME AT 100 SCANS/SEC
(16 channel operation)
3Hours per 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/IMU SYSTEM

An attitude and location measurement system is integral to the instrument. Attitude and location information from this system are used in real-time or in post processing, together with a DEM, to remove the effects of aircraft motion & terrain relief from the image data. Output image is North-up and ortho-rectified.

This product is subject to controls under the ITAR

Specifications subject to change.

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