TABI1800

Airborne Wide-Array Broadband Thermal Imager

40° FOV

High Thermal Resolution

Integrated Control & Recording System

Integrated IMU (optional)

Reduced acquisition costs (less flying, wider swath coverage)

Custom diffraction-limited, high-performance optics[1]

itres

HYPERSPECTRAL & THERMAL REMOTE SENSING

[1]Diffraction-limited optics ensure that every pixel is a spatially independent sample with no smearing. This gives users optimal image quality and focus.

TABI1800

Building Heat Loss / Emergency Response / Power Line Mapping / Wildlife Surveys / Soil Moisture / Subsurface Karst Feature Detection / Buried Pipeline Delineation / Mineral Composition / Stratigraphy & Structural Geology / Hotspot Mapping / Vulcanology

SENSOR TYPE

TIR Pushframe Sensor
(Cooled MCT Thermal Airborne Broadband Imager)

PERFORMANCE

Spectral Range (Continuous Coverage)	3.7-4.8 microns
# Spectral Channels	1
# Across-Track Pixels	1800
Total Field of View	40 degrees
IFOV (+/- 10%)	0.405 milliradians
f/#	f/2
Pixel Size	15 x 15 microns
Dynamic Range	14-bits (16384:1)
Frame Rate	90 to 100 frames per second
NEDT at 300K:	<50mK

ENVIRONMENTAL CONSTRAINTS

Operating Temperature	Ambient -10° to +40°C (+14° to +104°F) RH 20-50% non-condensing
Maximum Altitude	3,048m (10,000 ft) ASL (unpressurized,non-condensing environment)
Storage Temperature	Optimum -20° to +60°C (-4° to +140°F) RH 0-90% non-condensing

TABI-1800 Imagery:

TABI-1800, 70 cm resolution

DIMENSIONS, WEIGHTS, AND POWER

ITEM	W / H / D (CM) / WT. (KG)
SHU with Integrated ICU	35.5 / 61.4 / 39.6 / 31
15" Display	42.3/ 32.2 / 10.3 / 10
SHU Cable Length	3 metres
Power	24-32 VDC, 8A VDC (typical, without IMU)

OPERATION

Display	15" sunlight readable, 1024x768 resolution. High altitude display available
Operator	Control Via keyboard, Embedded Windows™ OS
Real-Time Display	Scene Image, automated sensor health diagnostics, signal level display
Remote Diagnostics	Ethernet-ready remote diagnostic capability
Data Storage	Swappable Solid State mass storage
Multiple Sensor Operation	Up to 5 different ITRES imagers may be simultaneously operated via MuSIC™ System

DATA PROCESSING SYSTEM

- Processing software Linux or Windows-based
- Playback software (Quicklook)
- Generates 16-32 bit BIP format data compatible with ENVI (BIL, BSQ formats possible)
- ASCII format ancillary QC data output – clocking, attitude, logging, GPS, and sensor health monitoring information
- Outputs diagnostic information
- Selectable band output

GEOCORRECTION SYSTEM

- GPS/IMU integration to POS AV (other systems available)
- Data synchronization (GPS, attitude, and image streams)
- Precision positional accuracy
- After bundle adjustment, no need for GCPs
- Stabilized mount option

GEOCORRECTION/ORTHOCORRECTION/MOSAICKING SOFTWARE

- Best nadir pixel selection function during mosaicking
- Accepts Lidar, Ifsar, and USGS DEM inputs
- Nearest neighbor algorithm used – maintains radiometric fidelity
- Separately stores ancillary data (e.g. pointing vector, DEM)

MOSAIC HOURLY COVERAGE

Real-world operational assumptions: 30% sidelap, 3.5 minute turns, 8 line mosaic, zig-zag flight direction, 90 to 110 Hz frame rate. Finer/coarser pixel resolutions possible.

- Up to 40 km^2 per hour at 0.15 m spatial resolution (160 knots)
- Up to 120 km^2 per hour at 0.5 m spatial resolution (160 knots)
- Up to 180 km^2 per hour at 0.75 m spatial resolution (160 knots)
- Up to 240 km^2 per hour at 1 m spatial resolution (160 knots)

SENSOR TYPE (COOLED MCT)

- Four times faster response time than uncooled bolometer arrays
- Capable of collecting 10 to 50 cm pixels from fixed wing aircraft (finer resolution from helicopter platforms)
- Increased thermal sensitivity (NEDT < 50 mK)

SPATIAL RESOLUTION & FLIGHT ALTITUDE

- Resolutions 10 cm to 1.25 m possible with typical unpressurized aircraft at 160 knots (e.g.)
- 0.5m Pixel Example: Flight altitude = 4050 ft AGL, Air speed = 160 knots

OPTIONAL IN-FLIGHT GEOCORRECTION & ANOMALY IDENTIFICATION

- Radiometric calibration & georeferencing applied prior to landing
- Customized algorithms can detect anomalies and provide GPS location in near real-time using IPS™

ITRES Research Limited
Calgary, Alberta, Canada
T: +1.403.250.9944
F: +1.403.250.9916

USA Contact Information
T: +1.228.467.2345
TF: +1.877.250.9944

info@itres.com
www.itres.com

Document ID: U10059-02

All ITRES sensors are calibrated to traceable standards.
Specifications subject to change without notice.