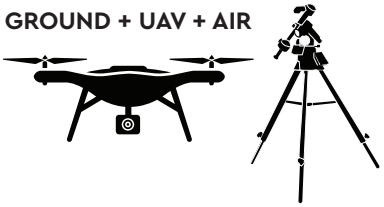
SPEC SHEET

INTERNALLY COOLED AND CALIBRATED, SMALL FORM FACTOR, HYPERSPECTRAL SWIR IMAGER

GROUND + UAV + AIR



MICROSASI640

FIELD-PORTABLE HYPERSPECTRAL MICRO-SWIR IMAGER FOR AIR & GROUND USE

- Portable Air/Ground Hyperspectral SWIR imager
- 0.95 - 2.5 µm Spectral Coverage
- Self-Contained Camera & Data Recording
- 256 Spectral Channels
- 40° FOV,
- 640 Spatial Imaging Pixels (620 effective)
- GNSS/MEMS-Inertial System Compatibility
- Internal Calibration System
- Easy Lidar Integration
- Can be integrated into iMMS Sensor Suite

3 line mosaic over Okotoks, AB (11.05.2022)

ITRES

HYPERSPECTRAL & THERMAL REMOTE SENSING

MICROSASI640

Small Form Factor, Hyperspectral Pushbroom SWIR Imager with Diffraction Limited Optics
Continuous VNIR-SWIR Coverage When Used with ITRES µCASI-1920

Target Detection and Synthetic Materials Mapping / Classifications / Geological Exploration / Vegetation Speciation / Aquatic Pollution Presence / Utility Corridor Mapping / Mineral Composition

SENSOR TYPE

SWIR Pushbroom Sensor
Shortwave Airborne Spectrographic Imager

PERFORMANCE

Spectral Range (Continuous Coverage)	0.95–2.5 Microns
# Spectral Channels	256
Cooling System	Cryo-cooler
# Across-Track Pixels	640±3% (620 effective)
Total Field of View	40°
IFOV	1.12 mRad (0.0645°)
F/#	F/2.5
Spectral Width Sampling/Row	6.1nm
Spectral Resolution (FWHM)	<8.8nm
Pixel Size	15 Microns
Dynamic Range	16-Bits
Detector Full Well	> 1 Me
Data Rate	100 FPS
Spectral Smile/ Keystone Distortion	< ±0.3 pixels
Time Stamping	<1ms
Calibration Accuracy	3% (NIST-Traceable)
Data Recording Capacity	2TB (SSD, SATA III) 10 Hrs @ 100FPS

DIMENSIONS, WEIGHTS, AND POWER

ITEM	W / H / D(CM) / WT. (KG)
SHU, CONTROL, RECORDING	12.7 / 22.5 / 25.4 / 4.75KG
POWER	75W @ 28 VDC

OPERATION

Operator	Control remotely via laptop & existing R/F downlink, or pre-programming track and way points
Multiple Sensor Operation	Up to 5 ITRES imagers may be simultaneously operated via MuSIC™ System

INTERFACE, TIME-STAMPING, REMOTE OPERATION & CONTROL

- GigE or USB-3
- TTL input for waypoint trigger (external)
- Automated control for pre-planned coordinates requires MEMS inertial (accepts .shp, .kml, etc.)
- Precision data time-stamping to external devices

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)

MAPPING SYSTEM

- GNSS-inertial or MEMS-inertial integration (optional)[1]
- Data synchronization (GPS, attitude, & image streams, if INS used)

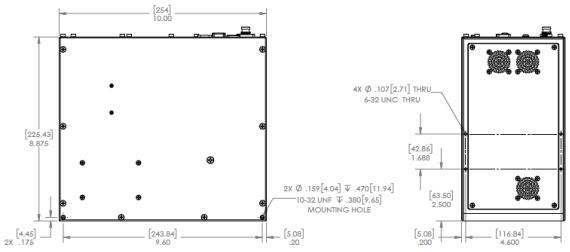
[1] Many inertial systems can be used with ITRES micro imagers. Required outputs are pulse per second (PPS) and suitable GNSS timing records.

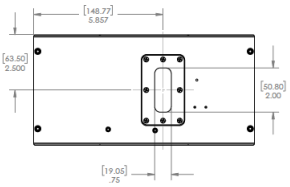
GEOCORRECTION SOFTWARE

- Accepts Lidar, Ifsar, and USGS DEM inputs
- Nearest neighbor algorithm used - maintains radiometric fidelity

EMBEDDED CALIBRATION MODULE

- Dark data collection
- Spectral lamp and uniformity measurements





2175 29 Street NE Unit 90,
Calgary, AB T 1Y7 H 8

Contact
403.250.9944

Email
info@itres.com

Web
Itres.com

DOC ID: U1010008