SPEC SHEET

# ITRES MODULAR MAPPING SYSTEM

DOC ID:U10104-002

AIR + HELICOPTER + UAV + GROUND

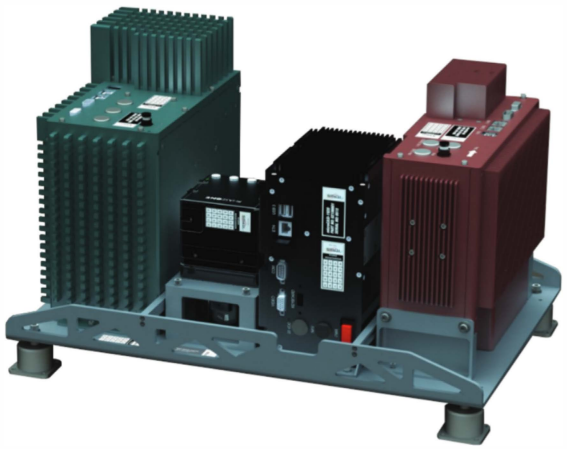
# IMMS

## ITRES MODULAR MAPPING SYSTEM

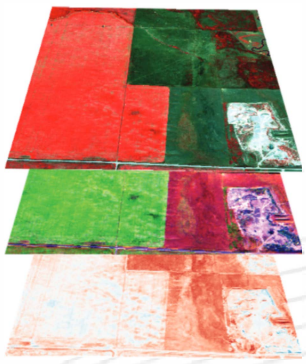
**PRECISION – AIRWORTHY – MODULAR – EARTH OBSERVATION SYSTEM**

- Modular and inter-changeable
- ITRES Flight Management System (Mission planning and flight navigation)
- High resolution digital aerial photography (RGB)
- Hyperspectral imaging (VNIR-SWIR)
- Broadband thermal imaging (MWIR)
- Precision radiometric image quality
- Precision aircraft rotation and positioning measurements
- DO160G qualified*
- Precision software processing workflow

* DO160 testing Sections and Categories available upon request



Representative Mounting Confguration
iMMS Mounts can be designed for specifc platforms.
DO-160 Qualification of Mount Assembly specifc to Mount PN.

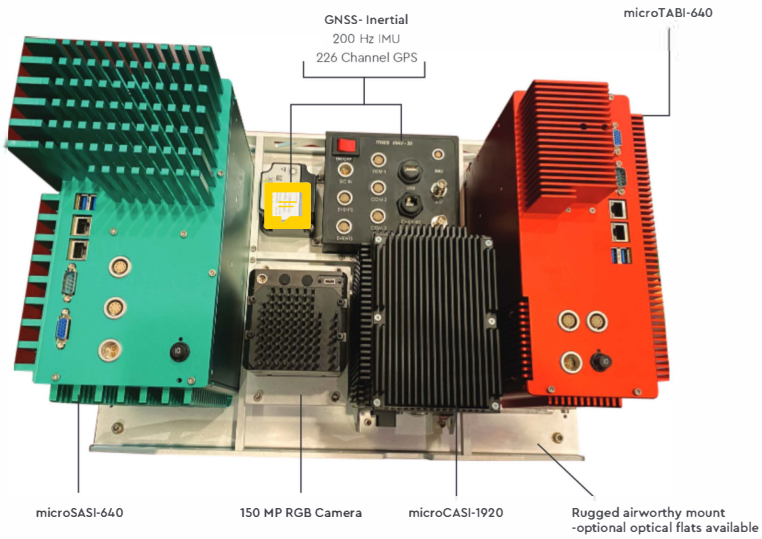


iMMS Data Sets

VNIR Data Cube

SWIR Data Cube

MWIR Temperature Mosaic




ITRES

HYPERSPECTRAL & THERMAL REMOTE SENSING

# IMMS ITRES MODULAR MAPPING SYSTEM

ITRES Modular Mapping System for Fixed-wing, helicopter and UAVs

Specifications
Hyperspectral and thermal imaging systems

| PERFORMANCE | microCASI-1920 (Hyperspectral VNIR) | microSASI-640 (Hyperspectral SWIR) | microTABI-640 (broadband thermal) |
|---|---|---|---|
| Spectral Range (nm) | 400 – 1000 (+/- 2 %) | 950 - 2500 (+/- 1 %) | 3700 - 4800 |
| # Spectral Channels | 288 | 256 | 1 |
| Spectral Resolution (nm) | 2.1 | 5.85 | 1100 |
| Full well (electrons) | ~32,000 | ~1 M | ~4 M |
| Field of View (degrees) | 36.6 | 40 | 40 |
| Number of Imaging Pixels | 1840 (+/- 2 %) | 620 (+/- 2 %) | 640 (+/- 2 %) |
| Time synchronization with GNSS-intertial system (ms) | <1 | <1 | <1 |
| Accuracy | %3 | %3 | 0.03 °C @ 300°K |
| Power Consumption | 45W @ 28 VDC | 75W @ 28 VDC | 75W @ 28 VDC |
| Dimensions (cm) | 11.3 X 16.9 X 21.2 | 14.23 X 27.94 X 28.89 | 11.68 X 25.4 X 22.86 |
| Weight (kg) | 3.1 | 6.85 | 4.75 |
| Bonding (mΩ) | < 10 | < 10 | < 10 |
| Internal Data Storage | 2TB | 2TB | 2TB |
| Frame Rate (hz) | 83 | 100 | 91 |

**GNSS-Inertial System (iNAV+)**

| | |
|---|---|
| Max IMU Raw Data Rate | 200 Hz |
| Max GNSS Data Rate | 5 Hz |
| GPS Channels | 220 |
| Positional accuracy | 0.05m (horiz), 0.1 m (vert) |
| Roll / Pitch | 0.015° |
| Velocity | 0.01 m/s |
| True Heading | 0.035° |
| Consumption | 25 W @ 28 VDC |
| Dimensions (cm) | 14.6 x 12.7 x 9.9 |
| Weight (kg) | 1.31 |
| Bonding (mΩ) | < 10 |
| Max IMU Raw Data Rate | 200 Hz |

**INERTIAL MEASUREMENT UNIT (IMU-92)**

| | |
|---|---|
| Max Raw Data Rate | 200 Hz |
| Roll / Pitch | 0.015° |
| Velocity | 0.01 m/s |
| True Heading | 0.035° |
| Consumption | 5 W @ 12 VDC |
| Dimensions (cm) | 6.8 x 6.1 x 6.5 |
| Weight (kg) | 0.345 |

**HIGH RESOLUTION AERIAL MAPPING CAMERA (RGB)**

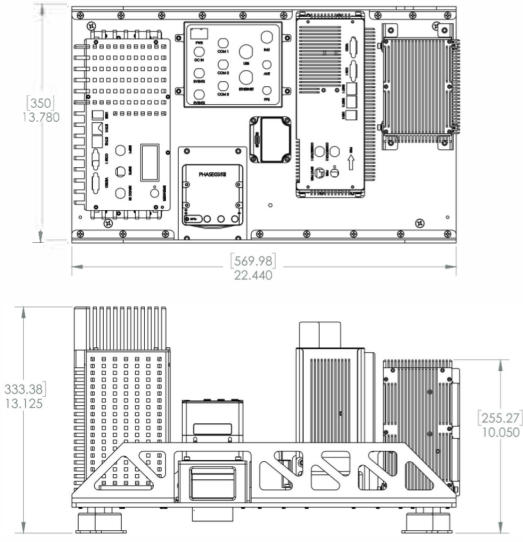
| | |
|---|---|
| Resolution | 150 MP |
| Data Rate | Up to 2 fps |
| Shutter Speed | Up to 1/2500 sec |
| Aperture Range | f/5.6 – f/22 |
| Synchronization | 50 µs |
| Consumption | 16 W @ 28 VDC |
| Dimensions (with 70mm lens) | 9.0 x 9.0 x 17.9 (cm) |
| Resolution | 150 MP |
| Weight (kg) | 1.6 |

**SIZE/WEIGHT OF IMMS COMPONENTS**

** Subject to Change
*** Lower resolution camera and different lens options are available

| Module | Part Number | Weight (kg) | Dimensions (XYZ) cm |
|---|---|---|---|
| iNAV+ | 02117101 | 1.308 | 14.6* 12.7* 9.9 |
| IMU 82 | 93005800 | 0.344 | 6.8* 6.1* 6.5 |
| uCASI-1920 | 02106601 | 3.098 | 11.3* 16.9* 21.1 |
| uSASI-640 | 02115900 | 6.61 | 14.3* 28* 28.9 |
| uTABI-640 | 02108402 | 4.31 | 11.7* 25.4* 22.9 |
| RS150F Camera | 93005500 | 1.62 | 9.0* 9.0* 17.9 |

IMMS is a networked system that is operated from HMI. The system can be operated manually or triggered using a FMS. IMMS components are qualified for EFA Sections of the RTCA DO-160G Standard. ITRES' AS9100 Certified QMS oversees the system design, manufacture and service of the IMMS System.

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