



**METASENSING**  
RADAR SOLUTIONS

# METASAR-C

## AIRBORNE SAR PAYLOAD

### ADVANCED RADAR SOLUTIONS REDEFINING PRECISION MAPPING

Your Ultimate Solution for Advanced  
SAR Imaging



#### ADVANCED C-BAND RADAR FOR AIRBORNE REMOTE SENSING

The MetaSAR-C is an advanced multi-channel Synthetic Aperture Radar (SAR) system operating in the C-band frequency range, engineered for airborne platforms. Designed to deliver high-resolution imaging in all weather conditions, MetaSAR-C supports a wide range of remote sensing applications including vegetation and forest mapping, ocean monitoring, agriculture, terrain subsidence and glacier analysis. Its C-band architecture provides reliable and detailed observations for both land and ocean monitoring applications.



#### COMPACT, FLEXIBLE, AND AIRCRAFT-READY

MetaSAR-C combines high-quality C-band radar performance with a compact, lightweight, and low-power design. Its modular system consists of a radar electronics unit, dual-polarimetric flat-panel antennas, and aircraft-specific mounting fixtures. Flexible swath size and resolution settings enable the system to be adapted to different mission requirements, while its compact architecture allows straightforward integration across multiple types of airborne platforms.



#### POLARIMETRIC INTERFEROMETRY AND CHANGE DETECTION

Airborne data collected with MetaSAR-C are processed using MetaSAR-PRO, MetaSensing's proprietary airborne SAR processing suite. Leveraging Polarimetric Interferometric SAR (PolInSAR) and Coherent Change Detection techniques, MetaSAR-PRO generates high-resolution, georeferenced GeoTIFF imagery for advanced monitoring and analysis. These capabilities enable the detection of subtle variations over time, providing valuable information for environmental, scientific, and operational applications.

# METASAR-C TECHNICAL DATA

|                                 |                                             |
|---------------------------------|---------------------------------------------|
| MetaSensing<br><b>MetaSAR-C</b> | C-band Airborne SAR                         |
| Frequency                       | 5.3 GHz                                     |
| Bandwidth                       | 300 MHz                                     |
| Ground Resolution               | Up to 0.5 m                                 |
| Antenna Type                    | Microstrip Patch                            |
| Antenna Gain                    | 18 dBi                                      |
| Azimuth Beamwidth               | 10°                                         |
| Elevation Beamwidth             | 38°                                         |
| Polarization                    | Dual Linear (Vertical & Horizontal)         |
| Power Consumption               | <200 W @ 18–30 VDC                          |
| Payload Mass                    | <18 kg                                      |
| Dimensions                      | Electronic Enclosure:<br>320 x 320 x 370 mm |

## KEY FEATURES

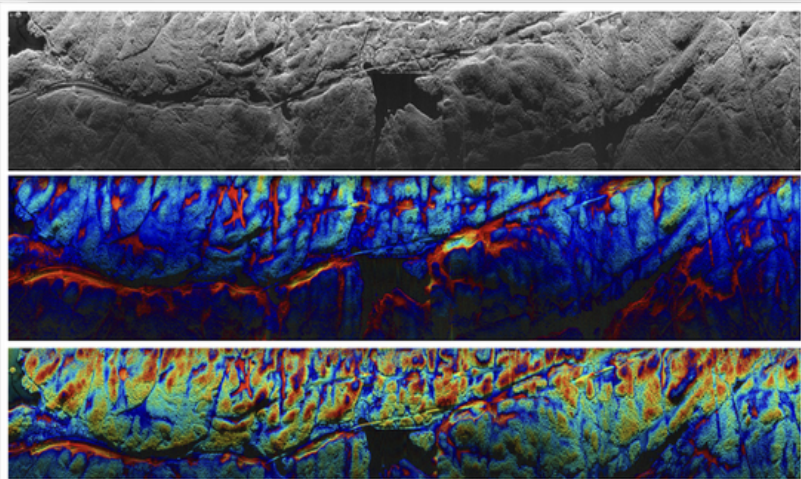
- Compact and lightweight airborne C-band SAR architecture.
- High-resolution imaging with up to 0.5 m ground resolution.
- Dual-linear polarization (HH/VV) for enhanced target characterization.
- Low power consumption for easy integration on multiple airborne platforms.
- Configurable swath and imaging performance to meet different mission requirements.
- Fully compatible with MetaSAR-PRO for georeferenced SAR data processing.

## KEY BENEFITS

- High-quality SAR imaging in all weather and day/night conditions.
- Compact design minimizes aircraft integration effort and operational costs.
- Reliable environmental and infrastructure monitoring with repeatable measurements.
- Flexible deployment across fixed-wing aircraft, helicopters and UAV platforms.
- Accurate georeferenced products ready for GIS analysis and operational workflows.

## APPLICATIONS:

- Topographic and terrain mapping.
- Infrastructure and corridor monitoring.
- Coastal and maritime surveillance.
- Environmental monitoring and land cover analysis.
- Agriculture and crop monitoring.
- Disaster response and emergency management.
- Change detection and asset inspection.



*SAR images acquired with the single-pass multi-baseline interferometric MetaSAR-C over forest. The top image is a SAR amplitude image, the middle image is a flattened, with SRTM DEM, interferogram with 33 cm baseline, the lower image is a flattened interferogram with 66 cm baseline. It is clearly visible that the lower image, with the longer baseline, is more sensitive and two times more fringes appear.*