



**METASENSING**  
Radar Solutions



## METASAR-P Airborne SAR

The MetaSAR-P is an advanced multichannel airborne Synthetic Aperture Radar (SAR) operating at UHF radio frequency. It provides calibrated airborne SAR images for Interferometric (InSAR), Polarimetric (PolSAR) and Tomographic (TomoSAR) applications.

MetaSAR-P is used for mapping applications (Digital Terrain Models - DTM generation) and monitoring (Foliage and Sand Penetration - FOPEN/SAPEN) applications such as vegetation & biomass mapping, pipeline monitoring as well as detection of targets and structures below the canopy.

MetaSensing provides a compact radar sensor that combines high-quality P-band radar performance with flexibility in swath size and resolution. The radar allows for all-weather observations of the scene to be monitored, with the system enclosure that can be easily installed on multiple types of aircraft. It is the culmination of more than a decade of experience in creating and developing state-of-the-art airborne SAR solutions.

The collected airborne SAR data, synchronized with high-accuracy navigation data, are processed with the MetaSAR-PRO software, MetaSensing's proprietary airborne SAR processor based on Global Back Projection algorithm. The MetaSAR-P provides Polarimetric Interferometric SAR (PolInSAR) images saved in georeferenced GeoTiff, the standard used by professionals worldwide. The Polarimetric SAR images can then be used for Automatic Feature Extraction and Land Cover Classification.

The MetaSAR-P with its long wavelengths, penetrate the forest canopy and provides measurements of the terrain surface elevation. By using the MetaSAR-P in repeat-pass InSAR, accurate Digital Terrain Model - DTM can be derived also for forested areas.

The MetaSAR-P system consists of a radar electronic box, characterized by its compact size and light weight as well as low power consumption, along with dual-polarimetric flat-panel antennas and mounting fixtures as required.

Details are provided in the technical specifications table.



*The MetaSAR-P enclosure is compact and light-weight, allowing for quick and flexible mounting on different aircraft.*

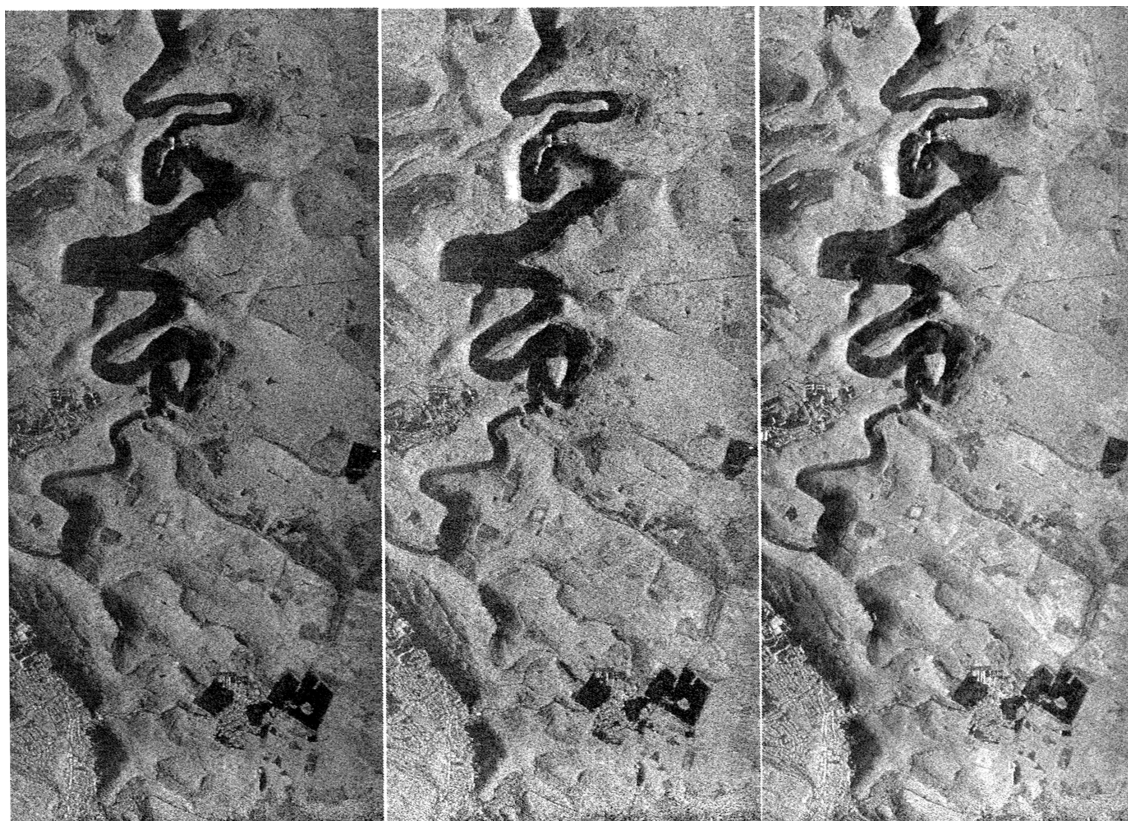
[www.metasensing.com](http://www.metasensing.com)



MetaSAR-P Technical Specifications	
Frequency	300 - 600 MHz
Bandwidth	up to 200 MHz
Resolution	from 0.75 m
Channels	2 alternating transmitters, 2 simultaneous receivers
IMU/GNSS	Embedded high-performance IMU/GNSS unit
Interferometry	Repeat-Pass
Polarization	Full (Linear Vertical & Horizontal): HH, VV, HV/VH
Swath (from 10000 feet altitude AGL)	from 2 km to 10+ km (depending on configuration)
Output file format	GeoTiff, NetCDF (with all necessary metadata)
Power consumption	< 280 W @ 28 V DC
Weight	< 20 Kg
Dimensions	Electronic Enclosure: 320x320x370 mm

The MetaSAR-P can be used in different configurations for various techniques and applications:

- Polarimetry (PolSAR): Automatic Feature Extraction, Land Cover Classification
- Interferometry (InSAR): Digital Terrain Model (DTM), Digital Elevation Model (DEM)
- Tomography (TomoSAR): Digital Terrain Model, Forest height, Biomass analysis



*MetaSAR-P Intensity images for different polarimetric channels (from left to right: HV/VH, HH, VV)*

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