





STRATOSPHERIC MULTIMODE SAR RADAR

A low-SWaP radar system capable of performing Synthetic Aperture Radar (SAR) imaging from a stratospheric Uncrewed Airborne System (UAS) or balloon platform.



WWW.IMSAR.COM



CAPABILITIES





The PSAR system is designed to operate continuously in stratospheric environments.



ŚIMSAR®

The Pseudo-satellite Synthetic Aperture Radar (PSAR) system was designed as a high-altitude radar system, capable of operating within the stringent Size, Weight, and Power (SWaP) requirements of High-Altitude, Long Endurance (HALE) platforms. IMSAR combined our military-proven NanoSAR technology with a lightweight, additive manufactured array.

The reduced SWaP is achieved by using the low-loss, additive manufactured, aluminum, single-array antenna as a structural and thermal component of the system, in addition to its role in transmitting and receiving the radar signals. The innovative design sufficiently reduces the space and weight required for the radar system to allow the radar to integrate into HALE platforms that were previously unable to carry radar sensors, including both Uncrewed Aircraft System (UAS) and balloon platforms.

SYSTEM SPECIFICATIONS

LENGTH: 5.2 IN (13.2 CM) WIDTH: 9.3 IN (23.6 CM) HEIGHT: 16.2 IN (41.4 CM)
7.7 LBS (3.49 KG)
COLLECTION: 69.5 W, 28 VDC IDLE: 42 W, 28 VDC
X-BAND
STRATOSPHERIC UNCREWED PLATFORMS, BALLOON PLATFORMS
CURSOR ON TARGET
ETHERNET
GROUND PROCESSING SERVER REQUIRED (SIZE AND WEIGHT NOT INCLUDED IN SPECIFICATIONS ABOVE)
LISA 3D™ AND RADAR CONTROL API
LISA 3D [™] OR EXISTING PED EQUIPMENT
KML, COMPLEX NITF, JPG, PNG, BMP
FORCED AIR, CONDUCTION
1
10 W PEAK
6/7

PERFORMANCE DATA

SAR IMAGING	RESOLUTION	0.3 M	1 M	3 M	10 M
	MAX RANGE	35 KM	53 KM	72 KM	100 KM

CAPABILITY VARIANTS

		PSAR(S)	PSAR(X)			
	IMAGING	SAR	SAR			
	OPERATING MODES	STRIPMAP, SPOTLIGHT, WIDE AREA	STRIPMAP, SPOTLIGHT, WIDE AREA			
	CHANGE DETECTION	NON -COHERENT (MCD)	NON -COHERENT (MCD)			
			COHERENT (CCD)			
	RESOLUTION (METERS)	0.3, 1, 2, 5, 10	0.3, 1, 2, 5, 10			
•	IMAGING OPERATING MODES CHANGE DETECTION RESOLUTION (METERS)	SAR STRIPMAP, SPOTLIGHT, WIDE AREA NON -COHERENT (MCD) 0.3, 1, 2, 5, 10	SAR STRIPMAP, SPOTLIGHT, WIDE AREA NON -COHERENT (MCD) COHERENT (CCD) 0.3, 1, 2, 5, 10			

APPLICATIONS

Specialized ISR Missions

Coastal Mapping

- Wildland Fire Monitoring
- Counter-Narcotics
 Sea Ice Detection & Monitoring
- Search & Rescue
- And More!

P. 801.798.8440 **F.** 801.798.2814

E. SALES@IMSAR.COM W. WWW.IMSAR.COM

A. 940 S 2000 W #140 SPRINGVILLE, UT 84663

© 2023 IMSAR LLC. NanoSAR*, NSP-3*, NSP-5*, NSP-5*, NSP-7*, Lisa 30*, Democratizing Radar*, IMSAR*, and all associated logos are trademarks of IMSAR* LLC. All other product or brand names as they appear are trademarks or registered trademarks of their respective holders. The Company shall not be liable for any errors contained herein or for any damages arising out of or related to this document or the information contained therein, even if the Company has been advised of the possibility of such damages. This document is intended for informational and instructional purposes only. The Company has been advised of the possibility of such damages. This document is intended for information contained in this document without prior notification.