



PICOSTAR SURVEILLANCE, TARGETING AND RECONNAISSANCE

PicoSTAR is designed to provide highly compact, lightweight integrated AESA radar and Electro-Optic (EO) capability for UAS and other small fixed or rotary wing platforms.

The PicoSTAR radar sub-system is based on the PicoSAR Active Electronically Scanned Array (AESA) radar, providing high resolution Synthetic Aperture imaging and GMTI.

The twin AESA modules can be mounted up to 2 metres away from the central EO/ processing module to enable integration on a wide range of platform configurations.

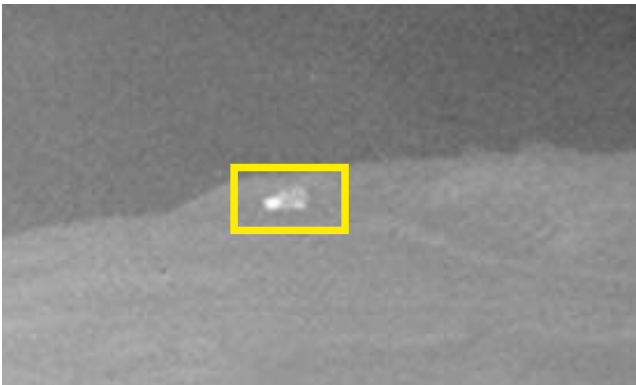
The EO sub-system implements the latest Swan II 4th Generation dual-mode imaging sensor together with a conventional zoom/ e-zoom TV sensor.

The 640x512 pixel Swan II sensor provides conventional passive MWIR imaging at 3-5 μ m together with active gated Burst Illumination LADAR (BIL) imaging at 1.57 μ m. Mode switching between passive IR and BIL imaging can be achieved on a video frame-by-frame basis.

Laser designation, rangefinding and target illumination is provided by a high-energy dual-band laser with outputs at 1.06 and 1.57 μ m.

KEY CAPABILITIES

- Integrated radar and EO surveillance, targeting and reconnaissance capability
- Increased platform effectiveness
- Reduced platforms “in-the-air” requirements
- Improved capability in poor weather (all-weather radar)
- Enhanced 24/7 Combat ID by Burst Illumination LADAR imaging
- Long range laser designation/ rangefinding/ illumination.



Swan II Dual-Mode Detector

TECHNICAL SPECIFICATIONS

AESA RADAR

Frequency	X-band
Scan Coverage	±45 AZ, ±45 EL (port & starboard)
Maximum range	20km (resolution dependent)
Map resolution	<0.3m
Capabilities	Strip SAR Spot SAR GMTI

ELECTRO-OPTICS

Dual-Mode Sensor	640x512 Pixel Array
	Passive MWIR @ 3-5µm
	Dual FOV Active Imaging @ 1.57µm 0.3m° FOV
TV Camera	Colour X° to Y° Zoom
Laser	Diode Pumped NdYAG
Energy	160mJ @ 1.06µm
	50mJ @ 1.57µm
Divergence	<0.2mrad @ 1.06µm
	Variable 0.7mrad to 3mrad @ 1.57µm
System Mass	<25kgs

BACKGROUND

Our company has been at the forefront of airborne radar capability since the 1950s, when the AI23 radar became the first high power monopulse radar to enter operational service. To maintain our leading position, we have been developing AESA technology since the early 1990s and we now have a range of AESA products available to meet the airborne radar market requirements.

PicoSTAR utilises the latest generation of 2D AESA technology in a very compact, lightweight antenna assembly. This has enabled, for the first time, the integration of AESA radar with a high performance EO sensor system in a single payload size/ mass configuration suitable for small/ medium UAS or other rotary and fixed wing platforms.

The PicoSTAR EO sensor system utilises our unique detector capability produced in Southampton UK, together with a high-energy laser designator/ rangefinder/ illuminator.

This technology enables both passive 3-5µm MWIR and 1.57µm Burst Illumination LADAR active imaging capability from a single detector/ camera system.

Bringing together state-of-the-art AESA radar and 4th Generation EO sensor capability in a small, lightweight payload configuration, PicoSTAR demonstrates the future for UAS payloads today.

