Technical Specification

- Frequency: Ku Band
- Weight: 30kg
- Range: >27km (35km Resolution dependant)
- Dimensions: Diameter 370mm Height 470mm
- Scan Coverage: 360 Degree azimuth rotation
- Elevation Tilt: +10 degrees / -55 degrees
- Power Consumption: <600W with various low power modes
- Electrical Interface: 28V DC Power & Ethernet
- GMTI Modes: 360 degree Surveillance, Spotlight, Sector Scan and Tracker
- GMTI Performance: Detection and accurate location of fast and slow moving targets including foot traffic
- SAR Modes: Strip Map and Spotlight
- SAR Resolution: 3m to <30cm
- Coherent Change Detection: Available

Options

Different configurations of I-MASTER can be offered to accommodate speed, size, weight and power constraints of various platforms and operational applications. The advanced Maritime Modes provide detection of a wide range of maritime targets against complex/mixed clutter in coastal and estuarine regions.

I-MASTER can be provided with its own optimised workstation, which provides intuitive radar control and advanced exploitation features along with the ability to integrate other sensors such as EO/IR systems and to provide data link interfaces.

I-MASTER™
GMTI/SAR Radar
The World’s leading Lightweight Tactical Surveillance GMTI/SAR Radar
I-MASTER is a compact lightweight, high performance radar. It provides world-leading, Ground Moving Target Indicator (GMTI) and Synthetic Aperture Radar (SAR) performance for All-Weather Surveillance, Detection, and Recognition of targets over large areas at long stand off ranges.

I-MASTER provides high fidelity imagery for classification and positioning of various targets and can accurately detect and locate moving targets (from fast moving vehicles to individuals at walking pace) in all weather conditions during day and night.

Weighing only 30kg, I-MASTER has been designed for easy installation on light fixed wing aircraft and helicopters as well as unmanned air vehicles (UAV’s). I-MASTER’s ‘plug & play’ integration capability has the same footprint as a standard 15” EO/IR sensor turret. It can easily replace, or on a dual payload carrying platform compliment, an EO/IR sensor.

Whether installed alone or to compliment an EO/IR sensor, I-MASTER greatly improves the effectiveness of any surveillance scenario.

Lightweight and versatile

I-MASTER offers the Mission Commander great versatility and utility. It can be deployed to perform the following roles:

- Border Protection
- Wide Area Surveillance
- Oil And Gas Field Protection In The Littoral
- Land Asset Protection
- Prevention Of Smuggling And Piracy
- Pollution Control And Monitoring
- Search And Rescue
- De-forestation Patrolls
- Illegal Mineral Extraction Patrols
- Pattern of Life Monitoring

• Counter Narcotics
• Battle Damage Assessment
• Collection of Forensic Timestamped Evidence
• Disaster Assessment
• All Weather Surveillance

The ability to image at long stand-off ranges, compared to a stand-alone EO/IR sensor, enables covert surveillance and improves platform survivability by distancing the air vehicle from a potential threat.

I-MASTER is a self-contained low mass, low power consumption LRU. The processed data output can be exploited in the air or on ground via a suitable datalink.

SAR Synthetic Aperture Radar

I-MASTER provides real-time, high resolution and accurate geo-located Ground Mapping

• Wide area coverage – the radar’s SAR mode is capable of surveying in excess of 800km2 per-hour
• All Weather – I-MASTER enables target detection in conditions of cloud, rain, fog/mist, smoke and sand storms that reduce or disable an EO/IR sensor.

I-MASTER’s Strip-map SAR mode would be used for wide area detection of stationary targets such as vehicles or encampments. Alternatively, the mode may be used for terrain mapping purposes.

I-MASTER’s Spotlight SAR mode would be used to obtain higher resolution imagery of specific targets for classification purposes.

CCD Coherent Change Detection

By comparing SAR images of the same area taken at different times (whether hours or days apart), it is possible to automatically highlight any changes that have taken place, such as new encampments.

I-MASTER detects extremely subtle changes. Unique THALES CCD algorithms enable historic tracks or imprints to be displayed on the image that are not visible to the eye or alternative sensors such as an EO/IR.

GMTI Ground Moving Target Indicator

I-MASTER incorporates a world leading Ground Moving Target Indicator (GMTI) to show the Mission Commander any moving objects in the radars field of view. I-MASTER is able to track tactically important targets, such as very low speed, low radar cross-section foot patrols through to fast moving targets such as speeding vehicles and under flying aircraft.

I-MASTER’s Scanning GMTI mode is used by the operator to search for signs of activity across a wide area or to build up a general picture of “pattern of life” in an area.

1. First pass SAR image of field
2. Second pass shows activity change
3. Coherent Change Detection shows vehicle tracks