Kelvin Hughes Surveillance provides the most advanced radar sensors for threat detection in multiple environments, deployable across a wide range of platforms. SharpEye™ radar ensures users have the best possible real-time situational awareness. We provide fully coherent radar technologies, developed specifically to suit a range of surveillance applications in the harshest of environments.

**SHARPEYE™ SOLID STATE TRANSCEIVER**

Kelvin Hughes has developed SharpEye™ to deliver superior radar performance and reliability in both land and sea theatres. SharpEye™ is the world’s first affordable solid-state radar offering high reliability and low cost of ownership. It delivers detection performance previously only available from much more expensive military systems. First adopted for use in marine and naval platforms, the proven SharpEye™ patented pulse sequence and advanced Doppler processing is now available for use in the land environment.

SharpEye™ delivers an improvement in sub-clutter visibility by approximately 30dB against other radar technologies. This means targets with small radar cross sections (RCS) such as soldiers can be detected even in the presence of heavy land clutter. SharpEye™ provides superior situational awareness through increased probability of detection of small targets and through detecting these targets at greater ranges than competing radars.

The SharpEye™ SxV coherent radar utilises the core SharpEye™ technology, offering low cost, low power consumption, lightweight design, ultra-high reliability, and superior performance. Key features include jamming resistance, counter surveillance, covert mode and interchangeable radome covers to suit mission needs. Doppler processing enables detection of extremely small and slow moving targets in poor weather conditions, day or night.

**SHARPEYE™ SxV**

The SharpEye™ SxV high performance X-band ground surveillance radar is designed for easy installation on multiple platforms, including vehicles with fixed or telescopic masts, and is display agnostic. The SxV provides the user with a discreet means to build the surveillance picture, thereby contributing to overall situational awareness. With 360 degrees of coverage, the SxV is the most powerful sensor available in its class.

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SharpEye™ SxV is a lightweight, low power, environmentally sealed X-band surveillance and tracking system designed to be deployed on a variety of platforms. The greatly reduced weight and smaller physical footprint of the technology, enables SxV to overcome the inherent performance limitations of other radar solutions. It presents operators with a high quality radar picture via multiple display options in the most demanding tactical environments.

SxV can be easily integrated with other systems, including electro-optical packages, and command and control systems. Kelvin Hughes is able to offer a flexible range of system configurations enabling the design of a tailored and cost-effective solution for the user.
# Lightweight Radar

## Features and Benefits

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<th>Feature</th>
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<td>Resilience</td>
<td>Resistant to jamming</td>
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<td>Resistant to interference</td>
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<td>Clutter Suppression</td>
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<td>Rapid Deployment</td>
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<td>Integrated GPS</td>
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<td></td>
<td>Fast radar power up</td>
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<td></td>
<td>Simple mounting options</td>
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<tr>
<td>Ultra-high reliability</td>
<td>Solid state electronics</td>
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<td>Graceful degradation</td>
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<td>Concurrent long and short range detection</td>
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<tr>
<td>Continuous system health monitor and built-in self test</td>
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<tr>
<td>Gigabit Ethernet radar output</td>
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<td>Automatic acquisition of air and surface targets</td>
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<td>360 degree and sector scanning</td>
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</table>

## Specification

### Peak Power

- Up to 80W

### Waveforms

- Pulsed, coherent
- Automatic power optimisation

### Signal Processing

- Pulse compression
- Pulse doppler
- Adaptive clutter suppression

### Asterix CAT 240 Protocol Radar Video Data Output over LAN

### Dimensions / Space Requirement

- Ø555mm x 262mm

### Antenna

- 522mm Rotating array

### Power Supply

- +13-32V DC
- 100-250V AC converter (option)

### Power Consumption

- 150 watts

### Weight

- 20kg

### Instrumented Range

- 44km

### Azimuth Beam Width

- < 4.0° @ -3dB

### Elevation Beam Width

- 25°

## Performance

### Detection Range

- Walking man: 5km
- Car: 15km

### Range Discrimination

- 45m

### Range Accuracy

- 5m RMS

### Azimuth Accuracy

- 0.8° RMS

### Number of Tracks

- Dependent on display option

### Probability of False Alarm

- 10⁻⁶ Pfa

### Moving Target Detection

- Up to 128 filters

### Constant False Alarm Rate

- Yes

### Environmental

- IP67

### Operating Temperature

- -25°C to +55°C

### Reliability

- Up to 30,000 hours MTBF

### Frequency Band

- 2-4.5 GHz

### Frequency Selection

- 14 user selectable

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1. Not including vibration kit.
2. Not including mounting kit.