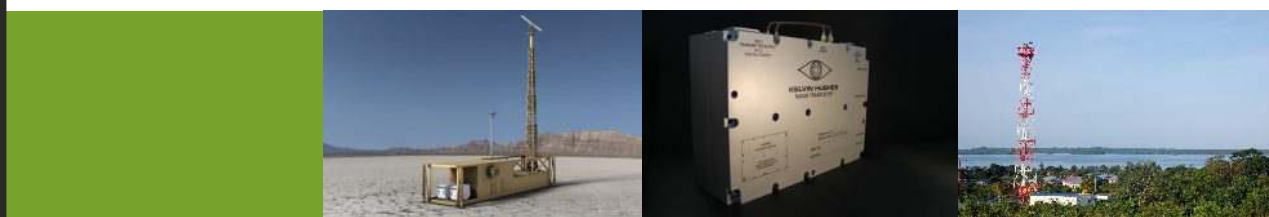


# SITUATIONAL INTELLIGENCE

## LONG RANGE RADAR

**SHARPEYE™**  
LONG RANGE SURVEILLANCE



Kelvin Hughes Surveillance provides the most advanced radar sensors for threat detection in multiple environments and 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 that are easily interfaced and which are designed 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™ Long Range 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 and covert mode to suit mission needs. Doppler processing enables detection of extremely small and slow moving targets in poor weather conditions, day or night.

### SHARPEYE™ LONG RANGE MULTI-DOMAIN RADAR

The SharpEye™ Long Range high performance X-band radar is designed for easy installation on a choice of platforms, with either a fixed or telescopic mast system or installation on fixed infrastructure. Our systems are specifically designed utilising industrial standard protocols to make the task of system integration as simple and low cost as possible. Flexible interfacing makes the system display agnostic and provides target data outputs utilising recognised industrial protocols. The SharpEye™ Long Range Radar is equally suited to operation as a single radar system or part of a wider radar sensor network and can operate autonomously under remote supervision.

DISPLAY OPTIONS	COMMS OPTIONS	PLATFORM OPTIONS
COMPACT DISPLAY SYSTEM WITH TRACKER	INTEGRATION WITH LEGACY COMMS	TRAILER
INTEGRATION WITH LEGACY DISPLAY	TRACK OUTPUT (WHERE AVAILABLE)	SHELTER
INTEGRATION WITH COTS DISPLAY	TRANSMISSION TO C&C VIA DEDICATED NETWORK	FIXED INFRASTRUCTURE

SharpEye™ Long Range Radar is a lightweight, low power, environmentally sealed X-band surveillance and tracking system designed to be deployed on multiple platforms. The low physical mass and smaller physical footprint of the radar transceiver and antenna assembly enables the widest possible choice of installation infrastructure solutions. Operators are provided with a high quality radar picture via multiple display options. A range of tracking software is available as part of the Kelvin Hughes display offerings.

SharpEye™ can be easily integrated with other sensors, 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.



# LONG RANGE RADAR

## FEATURES AND BENEFITS

		SHARP <sup>™</sup> Eye LONG RANGE SURVEILLANCE
RESILIENCE	RESISTANT TO JAMMING RESISTANT TO INTERFERENCE	✓ ✓
CLUTTER SUPPRESSION	DOPPLER PROCESSING RF FREQUENCY VARIATION	✓ ✓
RAPID DEPLOYMENT	INTEGRATED TRANSCEIVER FAST RADAR POWER UP	✓ 25 SEC (5 SEC FROM STANDBY)
ULTRA-HIGH RELIABILITY SOLID STATE ELECTRONICS		✓
GRACEFUL DEGRADATION		✓
CONCURRENT LONG AND SHORT RANGE DETECTION		✓
CONTINUOUS SYSTEM HEALTH MONITOR AND BUILT-IN SELF TEST		✓
GIGABIT ETHERNET RADAR OUTPUT		✓
AUTOMATIC ACQUISITION OF AIR AND SURFACE TARGETS		✓
360 DEGREE AND SECTOR SCANNING		✓

## SPECIFICATION

PEAK POWER	UP TO 300W
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 <sup>1</sup>	Ø5593mm x 765mm
ANTENNA	5.5m SLOTTED WAVEGUIDE
POWER SUPPLY	TRANSCEIVER 115/220V MOTOR 220/440V
POWER CONSUMPTION	1650 WATTS
WEIGHT <sup>2</sup>	145kg
INSTRUMENTED RANGE	89km
AZIMUTH BEAM WIDTH	0.45° @ -3dB
ELEVATION BEAM WIDTH	25°

## PERFORMANCE

DETECTION RANGE	CAR 11km HELICOPTER 35km
RANGE DISCRIMINATION	23m
RANGE ACCURACY	5m RMS
AZIMUTH ACCURACY	0.46° RMS
NUMBER OF TRACKS	500 with MantaDigital <sup>™</sup> DISPLAY
PROBABILITY OF FALSE ALARM	10 <sup>-4</sup> Pfa
MOVING TARGET DETECTION	UP TO 32 FILTERS
CONSTANT FALSE ALARM RATE	YES
ENVIRONMENTAL	IP54
OPERATING TEMPERATURE	-40°C TO +55°C
RELIABILITY	UP TO 50000 HOURS MTBF
FREQUENCY BAND	9.2 - 9.5 GHz
FREQUENCY SELECTION	14 USER SELECTABLE

<sup>1</sup> Not including Vibration Kit.

<sup>2</sup> Not including Mounting Kit.

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**SITUATIONAL INTELLIGENCE, THE WORLD OVER**

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