

# SITUATIONAL INTELLIGENCE

## LIGHTWEIGHT RADAR

**SHARP<sup>™</sup>Eye SxV**  
MOBILE SURVEILLANCE



Kelvin Hughes Surveillance provides the most advanced radar sensors for threat detection in multiple environments, deployable across a wide range of platforms. SharpEye<sup>™</sup> 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<sup>™</sup> SOLID STATE TRANSCIVER

Kelvin Hughes has developed SharpEye<sup>™</sup> to deliver superior radar performance and reliability in both land and sea theatres. SharpEye<sup>™</sup> 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<sup>™</sup> patented pulse sequence and advanced Doppler processing is now available for use in the land environment.

SharpEye<sup>™</sup> 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<sup>™</sup> 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<sup>™</sup> SxV coherent radar utilises the core SharpEye<sup>™</sup> 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<sup>™</sup> SxV

The SharpEye<sup>™</sup> 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.

DISPLAY OPTIONS	COMMS OPTIONS	PLATFORM OPTIONS
RUGGEDISED LAPTOP WITH TRACKER	INTEGRATION WITH LEGACY COMMS	MAN-PORTABLE
COMPACT DISPLAY SYSTEM WITH TRACKER	TRACK OUTPUT (WHERE AVAILABLE)	VEHICLE
INTEGRATION WITH LEGACY DISPLAY	TRANSMISSION TO C&C VIA DEDICATED NETWORK	TRAILER
INTEGRATION WITH COTS DISPLAY		SHELTER

SharpEye<sup>™</sup> 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.



SITUATIONAL INTELLIGENCE, THE WORLD OVER

FEATURES AND BENEFITS		SHARP™ Eye SxV MOBILE SURVEILLANCE
RESILIENCE	RESISTANT TO JAMMING RESISTANT TO INTERFERENCE	✓ ✓
CLUTTER SUPPRESSION	DOPPLER PROCESSING RF FREQUENCY VARIATION	✓ ✓
RAPID DEPLOYMENT	INTEGRATED TRANSCEIVER INTEGRATED GPS FAST RADAR POWER UP SIMPLE MOUNTING OPTIONS	✓ ✓ ✓ 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 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 <sup>1</sup>		Ø585mm x 262mm
ANTENNA		522mm ROTATING ARRAY
POWER SUPPLY		+19-32V DC 100-250V AC CONVERTER (OPTION)
POWER CONSUMPTION		150 WATTS
WEIGHT <sup>2</sup>		20kg
INSTRUMENTED RANGE		44km
AZIMUTH BEAM WIDTH		< 4.0° @ -3dB
ELEVATION BEAM WIDTH		25°
PERFORMANCE		
DETECTION RANGE	WALKING MAN CAR	5km 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 <sup>-4</sup> 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 30000 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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