


HIND DEFENCE EQUIPMENT PVT LTD































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EMPOWERING THOSE WHO PROTECT US

Profile

- Parent Company with common Director HIND OFFSHORE PVT LTD
 annual turnover of US Dollars 30 Million
- State of art infrastructure located in India & other countries.
- Professional team of staff having works experience of more than 20 years in business with Government agencies.
- We work within the frame work of Law and Ethical Business practices & engage ourselves in social services too, as part of our CSR initiative.
- Apart from it's core business, HIND GROUP has diversified into marketing / assembling (& in near future manufacturing) of allied equipment in the field of Defence & Para Military sector along with our global partners to cater to the customer requirements.
- We are working towards achieving our honorable Prime Minister's goal of "MAKE IN INDIA" with our newly incorporated company "HIND DEFENCE EQUIPMENT PVT LTD".

Focus Area

HIND GROUP strategically diversified into Defence and has established itself as a credible player for defence equipment with focus on state of the art technology.

The Group has a multi pronged defence strategy with an objective to:

- Become a supplier of choice to the Indian armed forces.
- Be a preferred partner for transfer of technology from global primes by setting up manufacturing/assembling facilities in India.
- Be an intrinsic part of the global defence equipment supply chain.
- Work in partnership with global primes to meet offset requirements as per the Indian Defence Procurement Procedure.

OUR OEM's





















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> SPYNEL Critical Infrastructure Surveillance



Spynel-M

INFRARED RADAR for WI

for WIDE AREA SURVEILLANCE

HIGH-END SITE PROTECTION DEPLOYED IN MINUTES

SPYNEL-M continuously captures full panoramic images every second, or can perform sector scanning at a higher rate, to bring real-time security against conventional and asymmetrical threats. It can also operate in staring mode at fastest rate, for target recognition. A single SPYNEL-M sensor can perform 24/7 early human intrusion alerts over a 1.5km-diameter area and can be quickly

deployed and confi gured. Any threat will be tracked at any time from any direction, including hardly detectable targets such as: crawling men, RHIBs, low altitude air targets, UAVs and stealth aircrafts. SPYNEL-M can replace up to 16 traditional cameras in one single sensor head. As a completely passive system, the SPYNEL-M is invisible to intruders, requires no additional illumination and cannot be tricked by camouflage nor jamming.

➤ APPLICATIONS

- Critical infrastructure protection (power stations, data centers, dams, prisons, water treatment stations, solar and wind farms, oil depots, ammunition dumps ...)
- 24/7 perimeter security
- 360° detection of asymmetrical threats
- Airport / airfield surveillance
- Port monitoring
- Special Operation Forces
- VIP and event security

➤ BENEFITS

- Cost effective, low power consumption and reliable surveillance system\
- Full 360-degree panoramic coverage with a single sensor
- Day and night panoramic scrutiny even in adverse weather conditions
- Flexible and easy configuration of the covered area
- Automatic tracking of all threats with superior image quality
- Compact, robust, lightweight equipment, for a fast deployment and an easy installation
- Fully passive system, totally undetectable unlike radar
- Uncooled IR technology, maintenance-free system





➤ TECHNICAL

	Spynel-M 300 W	Spynel-M 300 N	Spynel-M 600 W	Spynel-M 600 N
Harissotal First of Vice	360"	360*	31/0"	360"
Vertical Finitial View	30"	101	367	38#
Vertical Adjustment Till	-181/+18"	-18"/+18"	-18"/+18"	-007+107
Scorning Natu). Ht (360° / 1sec)	0.5 ftl (360° / 73ec)	1 Hz (3H0° / 12H1)	9.5 HI (360" C2NIU)
Sector Scar Rule (Option)	1.5 Hz or 160-degree nation 2.5 Hz or 160-degree nation	S 8 Hz on 180 degree sector 5.5 Hz on 90 degree sector	2.5 Hz on 180-segree sector 2.5 Hz on NO degree sector	0.6 Mg on 190-degree sector 3.5 Mg on 90-degree sector
General Format	336 c 256	336 x 256	640 x 512	580 x 512"
Image Resolution	D.7 Mpsens.	T.4 Mpseers	2.5 Mpmm	1.2 Mpero
Vieno Output, and Control	tone	TOPAP	FERMI.	TOMP
Optional Communication	WHEREAL	Wormens	Weene	Wateres
Diemouse (Door, a Height)	125 mm x 200 mm	123 mm x 200 mm	125 mm x 266 mm	135 mm s 200 mm
Weight	trag	1846	1844	3.6 kg
Cotional Forms Supply	Power was Edward	Preser was Disease	Peacer upon Citorrosi	Priores mayor Ethernest
Front Consumption	**	8 W	8W	64
Curreiting Temperature Range	-10°C / x56°C	40°C / 455°C	40/07/455/0	40'07 +5570
Protection Standard	If the	1P-66	P46	P.56
Detection Kange For				100
Hierare T	Up to 250 in	1/p to 400 w	tig to alth or	Alth In FDG, 4th
Gar 📾	12p to 600 m	Vie to 500 m	kie in 900 m	No to 1.500 m

➤ CONTROL AND DISPLAY SOFTWARE

Operating system: PC Windows - multiple screen and touch screen apabilities

Software functions: Get full advantage of Spynel sensor with Cyclope software. Cyclope provides, at a glance, real time panoramic display (360° strip, annular, radar & zoom views), 3D detection capabilities, unlimited targets designation and tracking, immediate threat location (azimuth, elevation, distance), GPS, AIS and radar data integration, automatic control of PTZ systems for target identification, forensic capabilities (timeline, sequence storage and playback), spatial and temporal bookmarks, multiple threats displayed on situation map, fine image stabilization and more...





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Discover
SPYNEL V-LRF
Brand new options for
Spynel- S and Spynel-X
NEW! Visible Channel, Laser Range Finder









The ultimate solution for 24/7 situational awareness

- * Better threat identification system
- Compact and easy to use
- ☆ Compatible with Cyclope software

NEW! Discover Spynel's V-LRF option

Visible Channel, Laser Range Finder

Spynel-S and -X can now be equipped with a Visible Channel and/or a Laser Range Finder!



Both of these opions are integrated in one single sensorhead The Visible Camera is aligned with the Infrared Camera and the LRF, allowing them to operate simultaneously!

ABOUT THE VISIBLE CHANNEL

The Visible Channel is a full HD (1920x1080) camera with a contiguous optical zoom x30, allowing to zoom in on a threat. The threat is detected and tracked by the Spynel sensor, thanks to its panoramic detection system operated by the Cyclone software. With this brand new contiguous optical zoom, the user can keep an eye on the threat during the identification phase. The Visible Channel enables to identify all types of objects located within the Spynel's detection range, even the smallest drones!



ABOUT THE LASER RANGE FINDER

The eye safe Laser Range Finder provides the user with the exact distance of all detected threats on land, at sea or in the air, regardless of their size (micro-drone, RIB, human...)

IDEAL FOR:

- UAV detection
- Human intrusion
- Border/Maritime surveillance

MAIN BENEFITS

- A better threat identification system with no blind spot.
- $\ensuremath{\mathfrak{B}}$ A compact and easy to use solution, fully integrated.
- One single interface : detection, recognition, tracking & identification on one screen with Cyclone.

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Sii™ OP

THE FIRST OPEN SOURCE DUAL CHANNEL SECURITY THERMAL CAMERA

INTRODUCING OUR NEWEST THERMAL IMAGING CAMERA Imagine an advanced compact thermal camera with everything you need in one package, without sacriicing image quality,

detection capabilities, or features. Presenting the new Sii™ OP, our most state of the art observation system to date, boasting an incredibly easy installation with day and night capabilities and a dedicated software development kit for full seamless 3rd party integration.

Equipped with thermal and visible-light channels for day and night surveillance, Sii™ OP meets global ONVIF standards to ensure interoperability of hardware and software products foreasy integration to both existing and new infrastructures, regardless of manufacturer.



BENEFITS FOR INTEGRATORS

Innovative Features - New design provides HD day and VGA / QVGA thermal night channels simultaneously in one compact, feature rich unit

Easy Installation - ON VIF profile Standard ensures simple integration into new or existing infrastructures

Software Compatible - The only truly open thermal camera, allowing for seamless integration with the software of your choice.

Advanced Optics - 7.5mm, 8.5mm, 14mm, 19mm, 25mm, 35mm, 50mm, 60mm, 75mm and 100mm a thermal lenses available.

Low Cost of Ownership - Incredible value in a compact and lightweight package

Best Support for Analytics - Highest detection with lowest false alarm rate

Rugged Design - Ruggedly designed to withstand the harshest environmental conditions

Unparalleled Support – customer service in the industry, hands down providing the best



BENEFITS FOR SOFTWARE PARTNERS

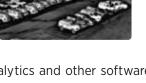
Dedicated Software Development Kit - For easy integration of analytics and other software with the camera.

Best Output Results- High performance camera that will showcase your software's best features.

Partnership Opportunities - Ability to join our exclusive Vumii partners program Vumii Support - Full access to our extensive support library and our dedicated support team

Vumii Sii™ OP

- APPLICATIONS
- Perimeter Security
- Government Sites
- Public Safety
- Coastal Surveillance
- Residential
- Airport Safety and Security
- Railway Infrastructure
- Power Stations Petrochemical
- Water Utility Infrastructure and many more...



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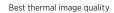
Vumii's extensive network of partners, integration abilities, competitive pricing, and high performance capabilities make the Sii™ OP an easy choice for all surveillance needs, allowing you to cover more ground with less cameras, compared to traditional CCTV solutions.

Sii[™] OP Specifications

Visual Camera	
Imager	HD CMOS
Resolution	1280 x 720
FOV	52° x 43°
Focus	Autofocus
Thermal Camera	
Imager	Uncooled 17 microbolometer 7.5 – 14 m
Resolution	640 x 480 / 384 x 288
NETD	<40 mK
Frame rate	8.7Hz or 25
Video modes	Black / white hot, 3 color palettes
Optics	7.5mm, 8.5mm, 14mm, 19mm, 25mm, 35mm, 50mm, 60mm, 75mm, 100mm
System Interfaces	
Control	ONVIF, web UI configurator
Video over ethernet	Two independent channels of H.264, M-JPEG, MPEG4 (optional)
1/0	2 available auxiliary general use built in I/O
General	
Unit dimensions	7.95" (L) x 5.32" (W) x 6.65" (H) 202mm (L) x 135mm (W) x 169mm (H)
Weight	< 6.94 lbs (3.15kg) – with respect to selected optics
Input voltage	12-32VDC or PoE (IEEE802.3af)
Enivronmental	
Operating temp	-40 to +55C°
IP rating	IP66

Vumii's portfolio of cameras and systems provides every piece of the puzzle for detection, recognition, and identification tasks, day or night. Vumii products deliver the best quality video by leveraging over 30 years of innovation and expertise in night-vision technology, utilizing superior image and signal processing, high quality components, and unique product design.







Excellent for surveillance and security



Easy integration with analytics

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quality and low power consumption.

Long range detection
Detect human size targets up to 500m
Detect vehicle size targets up to 1,500m

Interchangeable Lenses



Therm-App offers a variety of lenses to match specific operational needs. Currently available: 6.8/13/19/35mm lens options.



ModularCompatible with head-mounts, tripods, handles and other standard 1/4"-20 mounts.

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Improve situational awareness and enhance safety with long-range detection and recognition capabilities.



Security

See the unseen while on routine perimeter patrol, securing a facility, or identifying potential threats in dark or badly lit areas. It's easier to control and secure a perimeter, by obtaining clear images of people, animals, or vehicles at the scene.



Law Enforcement

Improve situational awareness and enhance safety while on patrol, responding to distress calls, exiting patrol vehicles, and entering buildings. Identify perpetrators trying to avoid detection or fleeing the scene.



Wildlife

Obtain a clear view of animals in the wild, irrespective of lighting or weather conditions through high grass, dense brush, or forested areas.



Search and Rescue

Locate injured or unconscious people on land or in water, in any weather or environmental conditions such as fog or smoke. Detect signs of life even in thick foliage or wooded areas, day or night.

Therm-App Technical Specifications

Smartphone	
Minimal Requirements	Android 4.1 and above, supporting USB OTG
Hardware	
Imager	384 x 288 microbolometer LWIR 7.5 -14um
Optics	6.8mm lens (55° x 41°) 13mm lens (29°x 22°) 19mm lens (19°x14°) 35mm lens (11° x 8°)
Focus	Manual, 0.2m to in nit
Frame Rate	25Hz
Weight	138 grams / 4.86 ounces
Size	55 x 65 x 40mm (2.16 x 2.55 x 1.57in)
Operating Temperature	-10°C to +50°C (14°F to +122°F)
Storage Temperature	-20°C to +50°C (-4°F to +122°F)
Power Suppl	No batter , 5 over USB OTG cable, power consumption < 0.5W
Certi cations	CE, FCC, RoHS
Encapsulation	IP54
Mount/Handle	Ergonomic handle, using 1/4"-20 standard tripod mount
Device Attachment	Clip-on for smartphone (5 -10cm span)

384 x 288 pixels (>110,000 pixels)
+/- 3°C or 3% (@25°C)
NETD <0.07°C
5 – 90 °C
Night ision Thermograph (Basic)
ideo Audio (h.264), Snapshot
Email, SMS
ia media galler
Hot White / Hot Black / Iron / Rainbow / Gre / ivid
Continuous digital zoom using touchscreen
es (via Google Pla)
Bad pixel repair uilitit



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Wall Through Radar-TW

Wall Through Radar TWIR is designed to improve the safety of Special Forces soldiers in counter-terrorist operations and to quickly find the people affected in the aftermath of natural and manmade disasters.

The radar can detect live people behind optically opaque situations: in the smoke, behind the walls of various materials under the buildings and behind the walls up to

TWIR can detect, both moving and a stationary person by measuring his breathing as well. Information about the distance of detected objects is displayed on the LCD. TWIR provides 2 display Modes:

1) Detects a stationary human by measuring the breath, simultaneous it can detect several human beings at different distances, it can also construct the trajectory of the human activities in 1.50 mode on the LCD display.

2) For quick detect "Histogram" is used.

TECHNICAL CHARACTERISTICS

Permeable construction materials

Cement, plaster, brick, concrete, reinforced concrete, drywall, wood and all standard building materials

Display Modes

•1.5D for determining the presence of several people and building trajectory of the man.

· Histogram mode for quick determining the presence of human Behind the wall.

Detection range Resolution Range Power supply Battery Life

0.3 meters 4 AA batteries

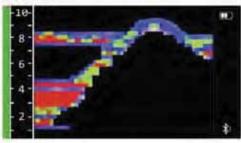
10 meters

Not less than 2 hours

Overall dimensions, min

41.5x118x180.5

1.5D mode



Histogram mode



Weld Mesh Fencing System >

Yet another type of fence where the wires are spot welded at each intersection (square or rectangular in shape) is called weld mesh fence. Hind Defence Equipment Private Limited is capable of manufacturing comprehensive range of welded mesh in roll and panel forms to contractors and commercial application. Weld mesh fencing supports all types of perimeter fencing requirements be it industrial, commercial, airports, schools, residential premises, prisons, highways, leisure and recreational areas.

Based on the application, surface finish can be chosen from MS, galvanized (before and after HDG), Polyester powder coated (PPC), PVC coated. A better top coat will ensure that the life of the fence is increased and thus saving on the repetitive cost of fence installation. Color of the PPC and PVC can be selected from among any RAL shade such as dark green, black, grey, beige, white, etc.



Benefits of weld mesh fence

Weld mesh fence provides a rigid fence. The versatility of the fence makes it very easy to install which makes use of minimal fencing accessories such as small specially designs clamps and nut & bolts only. Weld mesh fence is an ideal fence for indoor and outdoor use. For additional lateral strength, weld mesh panels can be crimped in 'V' shape. System designs of weld mesh fence are simple enough to the extent that on site fabrication is never required. Cost can be controlled by increasing the mesh size on even side of the wires.



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Culvert openings are typically regarded as a potential intrusion point into any site protected by a Perimeter Intrusion Detection System. Sophisticated intruders will typically look for the weakest link in any security system to gain un-detected access to a protected site.

The **V-ALERT GRID** system provides a user-friendly and high performance solution for protecting these vulnerable areas. The V-ALERT SENSOR is used to uses state-of-theart electronic components to provide an integrated intrusion detection solution, protecting the perimeter fence as well as culvert grids, drainage openings accessing the protected site.

Installed on or inside the grid frame, the **V-ALERT SENSOR** will detect any attempts to open the grid or cut the grid.

V-ALERT GRID PROTECTING WATER CULVERT GRIDS AS PART OF THE PERIMETER WALL/FENCE DETECTION SYSTEM

Key Features

- Install on any type of grid to instantly upgrade the grid to detect an intrusion attempt.
- Receive a **PINPOINT** alarm indication from the specific sensor installed on the arid.
- Install on **AUTOMATED** grid openings as well as on MANUAL grids that can be opened MANUALLY or by **REMOTE CONTROL** during times of flood or for maintenance purposes.
- The **V-ALERT SENSOR** is completely sealed to enable continuous operation, even under-water.
- **EASY INTEGRATION** No need to integrate a separate detector technology - the same V-Alert Sensor used on the perimeter fence is used on the grid.
- **EASY VERIFICATION** provide exact point of intrusion to CCTV camera enabling verification of the intrusion attempt.

The versatility of the **V-ALERT** technology enables the use of the sensor on many different non-perimeter applications such ason solid structures, protecting ANY element that is prone to theft and/or strategic damage.

PROVEN DETECTION CAPABILITY



SECURITY TECHNOLOGIES

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PIN-POINT PERIMETER INTRUSION DETECTION SYSTEM

The V-ALERT INTRUSION DETECTION SYSTEM is an advanced intrusion detection system using ELECTRONIC V-ALERT sensors that provide PIN-POINT alarm detection capabilities on fences, walls and solid structures.

The sensitivity and detection parameters of each V-ALERT SENSOR can be adjusted to ensure that the system operates at the optimal alarm detection level, according to the specific site conditions and the type of fence, barrier or element on which the sensor is installed.

FEATURES

- Multi-Function Sensor used on applications alongside and integrated with traditional perimeter fence applications.
- 3 m Alarm Detection Resolution alarm signal from EACH sensor.
- V-Alert Sensors each Sensor with unique electronic ID.
- Microprocessor controlled system ADAPTS to harsh and ever changing environmental conditions.
- User friendly INSTALLATION and SET-UP using the V-Alert Settings Manager
- Enhanced RELIABILITY and PERFORMANCE tailormade to the specific site conditions
- DETECTS attempts to break through WALLS
- ◆ DETECTS fence cut and clims
- Adjustable Sensitivity and Alarm Detection Parameters of individual sensors in TWO separate detection axes Integrating OUTDOOR with INDOOR security applications
- Upgrade any type of Perimeter Fence (wall, chain-link, welded mesh, ornamental, metal posts, taut wire, barbed wire, etc.)

WIDE RANGE OF APPLICATIONS

- Industry Factories, Warehouses, Industrial Parks
- Civil Residential Areas, Sports Facilities, Hotels
- Government Strategic Air and Sea Ports, Railway Facilities, Nuclear Power Plants, Oil and Gas, High SecurityGovernment Factories and Strategic Facilities
- Remote Solar Farms, Cellular and Communication base stations
- Utilities Water, Gas, Electricity
- Military Border's, Army Bases, Armouries
- Commercial Bank Safety Deposit Boxes, ATM's, Parking Vending machines, Trucks & Mobile assets

TECHNICAL DATA

Temperature Operating temperature

-30°C to +70°C

Humidity 20% - 95% condensing **Enclosure** Weather proof

Weather proof epoxy housing

Outdoor Cable - UV

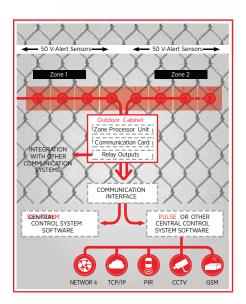
resistant

Input voltage 12-30V DC System components

Cable

Zone Processor Card for 2 x 50 sensor lines Sensor spacing – 3 - 6 m

Relay Card – 8 relay outputs for integration – 2 relay outputs for CUT alarm



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V-Alert Perimeter Intrusion Detection System

1. INTRODUCTION

- 1.1. The V-Alert System is a unique and versatile ELECTRONIC SENSOR based system providing a wide range of integrated outdoor and indoor security solution.
- 1.2. This system detects intrusion attempts caused by cutting or climbing the fencing barrier or attempts to break through walls or steal or damage protected objects.
- 1.3. Electronic sensor replaces traditional mechanical sensors and has distinct technological advantages over other electronic sensors.

2. SYSTEM ADVANTAGES

- 2.1. The major advantages of V-Alert Intrusion Detection System are:
- □ **Electronic** Sensor with NO moving parts solid state electronics
- □ **Higher detection resolution** each sensor provides an independent alarm indication.
- □ The ability to suit a **wider range** of applications due to the systems technological capabilities.
- Independent alarm indications from each sensor. Each sensor has a unique ID
- Rugged and Sealed to meet harsh environmental conditions (inc. underwater)
- The **sensitivity** of each sersor can be changed according to the barries on which the sensor is installed.
- Can **detect** intrusion attempts on walls, window bars or other solid structures or objects.
- ACT (Adaptive Calibration Technology) our unique technology enables extremely high detection with negligible false alarm rates
- Adjustable Sensitivity of individual sensors in TWO separate detection axis.
- □ **3 m Pin Point** detection resolution on perimeter fences.
- MANY DIFFERENT application in the same sensor line.
- V-Alert enables unlimited detection solutions for wide range of applications.

2.2. TYPICAL APPLICATIONS

- Any type of Perimeter Fence and barriers (wall, chainlink, welded mesh, ornamental, metal posts, taut wire, barbed wire, etc.)
- Solar Farms and Solar Panels
- Cellular and communication base stations
- Utilities -Water, Gas, Electricity
- Power plants
- Industrial and Military Sites
- Port and Airports
- □ Bank Safety Deposit Boxes, ATM's, Vending machines
- Mobile assets





V-Alert Perimeter Intrusion Detection System

V-Alert Technical Specifications

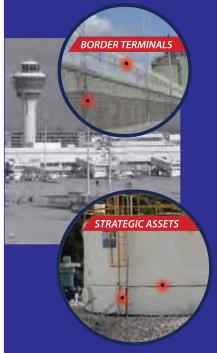
V-Alert Processor Card		
Operating Voltage	9-14 V	
Input Current	50-250mA	
Number of Sensor Line outputs	2 sensor lines	
Number of sensors per sensor line	50 sensors max (standard)	
Current Limit per sensor line	1A Poly Fuse	
Communication - sensor line	RS 485 Balanced 120 HALF DUPLEX	
Communication Frame	9600 8N1	
Communication to PC	RS 232	
Communication Frame to PC	19200 8N1	
Processor Card Dimensions	200 x 200 mm	
Memory size	64K	
RTC (Real Time Clock)	Hour -Minutes -Seconds	
Mode	MASTER	
Programmable Parameters	Using V- AlertCOMM Settings Manager	
X-Axis – adjust alarm value		
Y-Axis – adjust alarm value		
Output Signals:	4 Relays for each sensor line	
Relays for sensor lines	1 Relays for sensor line CUT for each sensor line	
Communication to PC	Individual Sensor Level	
Communication to DUAL COMM Communication system	Individual Sensor Level	
SMS Communication	Individual Sensor Level	
Flash memory		
Operating Temperature	-30 ° to + 70 ° C	
StorageTemperature	-30 ° to + 70 ° C	
Humidity	20% to 95 %	
Lightning Protection	ESD (Electro Static Discharge)	

=-99	`	
V-Alert Sensor		
Operating Voltage	8_13.8 V	
Power consumption	10 mA	
Communication	RS 485 HALF DUPLEX	
Communication Frame	9600 8N1	
Number axes	2	
Angle between axes	90 °	
Detection Method	PEAK DETECT	
Programming	5 pin connector	
Size	20 mm x 50 mm	
Cable	2 x 2 x 0.5 mm Shielded Twisted Pair	
Minimum Sensitivity	± 0.02 g per axis	
Maximum Sensitivity	± 2 g per axis	
Cross Talk	40 DB	
Operating Temperature	-30 ° to + 70 ° C	
Storage Temperature	-30 ° to + 70 ° C	
Recommended Installation Temperature	-20 ° and above	
Humidity	10% to 95 %	
Operating Mode	SLAVE	

VALERT

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V-aler

Perimeter Intrusion Detection System Protecting International Border Applications





ALARM
INTEGRATION

GSM DIALER
ALARM PANEL

ON SITE
CONTROL CENTER

Electronic Cabinet

Zone Processor Unit

DRY CONTACTS

DualCOMM/LineCOMM
Communication

APPLICATIONS

System Features

The V-ALERT INDOOR OUTDOOR DETECTION SYSTEM is an advanced intrusion detection system used in a wide variety of integrated INDOOR - OUTDOOR security applications.

The V-ALERT sensor is an electronic sensor with no moving parts that has been designed to detect changes in movement or vibrations caused by attempts to cut, break or remove elements in the protected site.

EACH V-ALERT sensor will provide an independent alarm indication from the element on which it is installed.

ONE integrated system protects all the elements in the protected site with one continuous line of V-Alert Sensors. There is no need to install other detection systems on site.

The status of each individual electronic sensor is monitored electronically and analyzed by the Zone Processor Unit. The system detects changes in the status of individual sensors providing an accurate and reliable alarm detection capability.

System Installation & Integration

V-Alert Settings Manager Application is used to program and set-up the system. The sensitivity of each individual V-Alert sensor can be adjusted.

Alarm indications from the zone processor unit are integrated with Alarm Panels, GSM Dialers or any other available communication system or network Dry-contact relay outputs enable integration with other communication equipment.

Specifications:

V-Alert System

2 lines of up to 50 sensors each line connected to one

V-Alert Processor Card

Integration

V-Alert Relay Card with 10 Relay Outputs

Temperature

Operating temperature -40°C to +70°C

Humidity

20% - 95% condensing

Enclosure and Cable Weather proof epoxy enclosure Outdoor Cable – UV resistant

Input Voltage 12-30V DC

The V-Alert Sensor technology is continually being upgraded and updated in order to equal or improve the system's performance.

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- Border Perimeter Fences & Walls
- Border Terminals
- Border Customs Trade Areas
- Strategic Assets in Border Area
- Military Bases in the Border Area
- Military Equipment in the Border Area





Distributed Acoustic Sensing based Intrusion Detection System



Fiber Optic Sensor



Fiber Optic Sensors in Real Time Monitoring

To Secure the Following:

- * Border Security for third part Intrusion Detection
- * Oil & Gas Industry pipeline third party intrusion detection
- * Oil & Gas pipeline third party intrusion detection
- * Wildlife Sanctuaries, Rail & Road crossings, Poaching activities
- * Military & Air force borders
- * Airports perimeters
- * Civil Structures like Dams, Bridges
- ★ Guard personal property villa / mansion from unauthorized access
- * Banks & ATM
- * Central Jails
- * Hospitals & monuments













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Praetorian Fibre Optic Sensing Distributed Acoustic Sensing (DAS)





Principle of Operation

Praetorian emits a laser pulse down a fibre optic cable to measure vibration and the position of that vibration. Using a combination of Rayleigh backscatter and time of flight, Praetorian determines the presence, location, intensity and frequency of vibrations along an optical fibre in real time.

Rayleigh backscatter responds to physical vibrations imparted on the fibre by disturbances to the application. HAWK'S signal analysis software allows Praetorian to quickly determine the most likely origin of the vibration and report any signals to the operator.

Location of vibration is determined using a "Time of Flight" calculation. When a laser pulse is emitted from the system a very fast clock is started. As backscattered light returns to the detector they are recorded for further analysis and time stamped. Due to the speed of light being constant within a fibre (approximately two thirds of normal light speed) this time stamp corresponds to a distance on the fibre.

Unique Features

No Time Splicing

Praetorian has a number of unique features which make it a market leading technology. Unlike other fibre sensing technologies the field programmable gate array allows for ultra fast parallel processing of the returned signals. Praetorian does not have to time splice or "skip" sections of time to keep up.

Extreme Laser Stability

Unlike systems restricted by Multimode LED light sources, Praetorian uses a highly stable laser controlled to within $\pm 0.04 pm$ allowing the system to handle two independent sensing channels of up to 40km each without any loss of measurement in switching or time splicing.

Fibre Condition Monitoring

Praetorian is also able to monitor cable condition whilst performing its normal duties. The condition of return signal at commissioning is recorded and praetorian regularly compares current signals to this commissioned state. Praetorian is able to determine that degradation is occurring to the cable due to age or other environmental condition and warn the user well in advance of sensing or data transfer problems occurring.

Applications

Praetorians capabilities lend it to a very wide range of possible applications. In the simplest terms praetorian is able to conduct live vibrational monitoring on any linear asset. In addition praetorian also is available with Distributed Temperature Sensing (DTS) and Distributed Strain Sensing (DSS) all within the same chassis.

Due to Pretorians extensive capabilities and sensing options multiple monitoring software suites are available for a number of different applications including (but not limited to):

- Perimeter security
- Rail infrastructure monitoring
- Pipeline leakage detection
- Conveyer malfunction and conveyer fire
- Fire detection
- Infrastructure strain and stress monitoring
- Borehole condition monitoring

Technical Specifications

Category	Parameter	Description
	Sensing element	Fibre Optic Sensing Cable
	Number of channels	1 or 2
	Interrogator operating temperature	0-50°C
	Unit operating humidity (max)	85% non-condensing
General	Dimensions	4RU 19" Rack Enclosure (190x600x490mm)
	Internal Cooling	3 individually controlled fans
	Weight	25kg
	Power supply	110-240VAC (50-60Hz, 24VDC
	Power consumption	<200W
	Sensing range	Up to 40km per channel
	Spatial resolution	250 or 500mm
Performance	Frequency response	1Hz-120kHz (Range Dependant)
	Temperature sensing range (cable)	-30°C to 200°C (special options for temps up to 800°C and down to -200°c available)
Technical	Light source	Laser (Infra red) Class 1M

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ARIEL

COVERT SURVEILLANCE SYSTEM FOR SPECIAL OPERATIONS, FORCE PROTECTION AND SITE SECURITY



DESIGNED TO BE CAMOUFLAGED



OPTIMIZED SWAP (SIZE, WEIGHT AND POWER)



QUICK DEPLOYMENT ON VARIOUS TYPES OF TERRAIN OR BURIED UNDERGROUND

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ARIEL IS A LIGHTWEIGHT, MODULAR, REMOTELY-CONTROLLED TARGET OBSERVATION AND ACQUISITION SYSTEM DESIGNED FOR COMBAT MULTI-TASKING. IT PROVIDES SUPERIOR PORTABLE DAY AND NIGHT OBSERVATION, BY ALLOWING QUICK DEPLOYMENT UNDER VARIABLE FIELD CONDITIONS.

ARIEL utilizes either built-in Video Motion Detection (VMD) or seismic sensors to detect movements (humans or vehicles), awaken the system and slave its camera to a detected target. The sensors' sensitivity can be easily adjusted by the user before or during the mission.

The system's core building block is ROSS – Seraphim's back-bone Remote Observation Surveillance System:

ROSS (ARIEL) main technical features and advantages include:

- Dual (day/thermal) observation capability including VMD
- Camouflage-friendly design
- Minimum energy consumption
- Multiple communication support (WiFi, Cellular, Satellite)
- Easily integrated with C4I Systems
- Full synergy with a variety of sensors
- TRL9

ARIEL can be covertly located, while aiming and stealthily investigating an area or object of interest without being noticed.

It communicates the real time situation picture by video via WiFi, cellular or satellite communication for a quick tactical response.

- Reconfigurable for both long and short operations, security and defence missions, and tactical maneuvering
- Extended surveillance using "sleep mode" or external batteries
- Operation via C4I center or Operational Control Unit (OCU)

ABOUT SERAPHIM

- Seraphim Optronics is a long-standing provider of sophisticated electro-optic solutions for persistent surveillance.
- Based on leading imaging, DSP and communication technologies, Seraphim capitalizes on over 20 years of close collaboration with military and para-military users.
- As our name implies, Seraphim Optronics is your guardian angel for effective responses to covert intelligence, defence and security missions.

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HIND DEFENCE EQUIPMENT PVT LTD

FIREFLY 140

Short Range Multi-Sensor Surveillance System For perimeter security and HLS

SYSTEM DESCRIPTION

FIREFLY is part of Seraphim Optronics compact, unify multi-sensing line of products, using short range radar, HD day and thermal cameras for HLS, Security and Defense applications. remotely-controlled for observation and target acquisition Enable multi-tasking missions by fast deployment capabilities under various field conditions. Integrated with external sensors such as seismic sensors and remote command and control

FIRE FLY MAIN TECHNICAL FEATURES

- Dual Cameras (day/ thermal) for observation capability
- Short range staring radar
- Internal Recording
- Remotely control
- Multiple communication methods (Lan, Wi-Fi, Cellular, UHF)
- Easily integrated with C4I Systems
- Designed for unattended use
- Minimum energy consumption (using "sleep mode" or external batteries)
- No infrastructure is needed
- Onvif
- Optional
 - Onboard VMD
 - Deep Learning
 - Low light camera
 - POE



APPLICATIONS

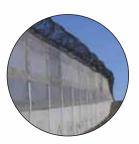
The FIREFLY is the optimal cost effective solution for:

- Perimeter security
- HLS
- Force protection
- Covert surveillance
- Mobile operations









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Technical Data

Characteristics	Value	
Day Camera		
1. Resolution	5MP	
2. Field of View	60º Horizontal	
3. Pitch	1.4 MM	
THERMAL CAMERA		
	17 1414	
1. PITCH	17 MM	
2. Resolution	640x480	
3. NETD 4. FOV	<35mk 57º Horizontal	
	5/- HONZONIA	
RADAR		
1. Detection Range	140m	
2. FOV	60º	
3. Tx Power	20 dBm	
4. Radio Frequency	24.00 - 24.25 GHz	
5. FCC approved		
COMMUNICATION		
1. Wi-Fi	2.4-2.485GHz	
2. 1W	Tx power	
3. Ethernet	10/100 Mbit/s	
4. Cellular	4G, LTE	
VIDEO STREAMING		
1. Compression	H.264	
2. Multi Cast	TS	
3. Unicast	RTSP MPEG4	
4. Bandwidth	0.1-4Mbit/s	
POWER		
1. Input Voltage	9-32V	
2. Power Consumption	<10W (Wi-Fi Streaming for video and radar)	
3. Standby Mode	>0.2W	
MECHANICAL		
1. SIZE	W120xH200xL100 mm Without antennas	
2. Weight	2kg	
ENVIRONMENTAL		
1. Operating Temp.	(-30°)÷55°C	
2 Vileration	2 DMC for an all anti-	

2g RMS for each axis

IP67

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2. Vibration

3. Environmental





HIND DEFENCE EQUIPMENT PVT LTD

BEE-1

BEE-1 Dual channel observation and surveillance system

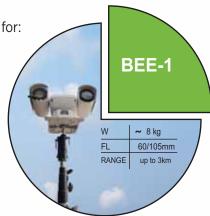
SYSTEM DESCRIPTION

BEE-1 Family is a compact and sophisticate day and night, dual -sensor observation system especially designed for HLS and security applications. It allows to the users excellent short-range detection and observation capabilities using state of the art Thermal and CMOS Technology. BEE-1 Family is the ideal system for wide range of security applications The system is ruggedized and designed to operate at harshest environmental and all weather conditions

APPLICATIONS

The BEE-1 family is the optimal cost effective solution for:

- Border protection
- HLS
- Coastal surveillance
- Critical assets surveillance
- Perimeter Security



BEE-1 MAIN TECHNICAL FEATURES

- Dual Cameras (day/night) observation capability with Unique Image processing
- Easily integrated with C4I Systems
- Continuous zoom or discreet FOV.
- Motorized, and autofocus lenses.
- Standard ONVIF Profile S

Optional

- Stabilized platform
- Compass
- Video analytics on edge











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Technical Data

KEY BENEFITS

- Superb 24/7 night and day surveillance capability
- Mission proved
- Modularity
- Cost effective
- Innovative Features
- Advanced Optics
- Rugged Design certified to IP66 and harsh environment conditions
- Simple Installation
- Tailor made



Thermal Imager

- Spectral Range 8-12μ
- Resolution 640 x 480
- pitch $17\mu / 12\mu$
- NETD <mk35mK@F1

Optional Optics

- Focal length 35-105 mm continues Zoom
- Focal length 60 mm fixed FOV
 - * Other optics available by demand

Thermal imager Additional Options

- VMD
- Image Stabilization

HD day camera

- CMOS HD
- Up to x40 continues zoom
- Image Stabilization
- Infrared Cut filter
- Sunshield

Video Output

- Analog or TCP/IP
- Video Compression H.264

Pan & Tilt unit

- Rotation Range: Pan 360°continuously; Tilt 180°
- Tilt Speed 0.4°~60°/S
- Pan Speed 0.4°~80°/S
- Preset Speed Pan 160°/S, Tilt 120°/S
- Position Accuracy ±0.025°
- Communication LAN/ETH
- Power -24V (DC/AC)



BEE-1

∼ 8 kg 60/105mm

RANGE

up to 3km



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HIND DEFENCE EQUIPMENT PVT LTD

BEE-3

BEE-3 Dual channel observation and surveillance system

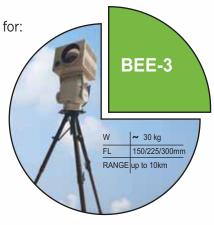
SYSTEM DESCRIPTION

BEE-3 Family is a powerful day and night, multi-sensor observation and surveillance system especially designed for HLS and security applications. It allows the users excellent mid-range detection and observation capabilities using state of the art Thermal and CMOS Technology. BEE-3 Family is the ideal system for wide range of security applications The system is ruggedized and designed to operate at harshest environmental and all weather conditions.

APPLICATIONS

The BEE-3 family is the optimal cost effective solution for:

- Border protection
- HLS
- Coastal surveillance
- Critical assets surveillance
- Perimeter Security



BEE3 MAIN TECHNICAL FEATURES

- Dual Cameras (day/night) for observation capability with Unique Image processing
- Easily integrated with C4I Systems
- Continuous zoom FOV.
- Motorized, and autofocus lenses.
- Standard ONVIF Profile S
- Optional
- Stabilized platform
- LRF
- Video analytics on edge
- Compass













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Technical Data

- Superb 24/7 night and day surveillance capability
- Mission proved
- Modularity
- Cost effective
- Advanced Optics
- Simple Installation

Available Configurations

Thermal Imager

- Optional Optics

- * Other optics available by demand

- Up to x40 continues zoom
- Image Stabilization
- Infrared Cut filter
- Sunshield

Video Output

- Rotation Range: Pan 360° continuously; Tilt 120°
- Tilt Speed 0.02°~45°/S
- Pan Speed 0.02°~15°/S

Communication - LAN

Power - 24V (DC/AC)



SERAPHIM OPTRONICS Intelligence & Security Solutions

BEE-3

150/225/300m up to 10k

Innovative Features

- Rugged Design certified to IP66 and harsh environments.
- Tailor made



- Spectral Range 8-12µ
- Resolution 640 x 480
- pitch $17\mu / 12\mu$
- NETD <mk35mK@F1
- Focal length 25-150 mm continues Zoom
- Focal length 25-225 mm continues Zoom
- Focal length 40-300 mm continues Zoom

Thermal imager Additional Options

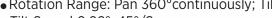
- VMD
- Image Stabilization

HD day camera Imager

- CMOS HD

- Analog or TCP/IP
- Video Compression H.264

Pan & Tilt unit



- Preset Speed Pan 160°/S, Tilt 120°/S
- Position Accuracy ±0.1°

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RAPHAEL

STAND-OFF RADAR-INTEGRATED
SURVEILLANCE SUITE FOR BORDERS AND
CRITICAL INFRASTRUCTURES



WIDE TERRAIN DOMINANCE



COST-EFFECTIVE SOLUTION



BEST SOLUTION FOR COMPLEX ARENAS

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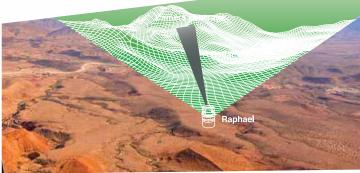
RAPHAEL IS A MAST-MOUNTED MULTI-SENSOR SUITE BASED ON SERAPHIM'S ROSS (REMOTE OBSERVATION AND SURVEILLANCE SYSTEM) THAT CREATES AN ACCURATE SITUATION PICTURE ENABLING COMMAND AND CONTROL CENTERS TO QUICKLY AND EFFICIENTLY MONITOR VITAL INSTALLATIONS AND BORDERS FROM A SAFE DISTANCE.

Incorporating both electro-optics and RADAR, RAPHAEL enables high-precision stand-off area observation, detection, acquisition, and investigation for short and medium range performance by day and night.

RAPHAEL's design enables operational versatility, with features including a camouflage capability, solar panel power, and a variety of communication options. These features, in addition to its "no infrastructure" requirement, provide a highly cost-effective solution for border and critical infrastructure defence and security.



- All-in-one stand-off system for same area coverage and persistent terrain dominance
- 90° field of regard, up to 2km
- Real-time information dispatch to C4I
- No infrastructure required
- Covert capability



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- Based on leading imaging, DSP and communication technologies, Seraphim capitalizes on over 20 years of close collaboration with military and para-military users
- As our name implies, Seraphim Optronics is your guardian angel for effective responses to covert intelligence, defence and security missions.



















Accuracy



SR-1000 (SCEPTER)

SR-1000 (Scepter) is Magos' long range addition to our advanced and cost-eective perimeter protection detection solutions for both rural and more saturated environments, without compromising on detection performance.

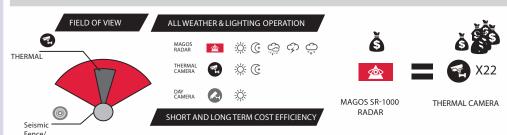
By utilizing state of the art MIMO & Digital beam forming technology it covers an area of more than 500,000m (>120 acres) with a detection range of up to 1000m and yet consumes extremely low power (<5W).

It boasts an ultra-high range accuracy giving it excellent performance in cluttered environments.

Its small size, low power consumption and low weight make it simple t as a deploy able system as well. to install and renders it ideal

SPECIFICATIONS

Sensor type High resolution MIMO digital beam-forming radar C-Band Frequency Up to 1000m Human, 1250m for Vehicle/Boat **Detection range** Drone detection - 250m No moving parts MTBF of 50,000 hours Built in tracker Extremely low required bandwidth Scan rate 2 scans per second Azimuth coverage 100^{0} Elevation coverage 30° High Range accuracy <0.3m 10 Azimuth accuracy Target detection speed 0.3 - 30 m/sec 48V, <5W Power System interface Ethernet (PoE) Dimensions 250mm(w) x 300mm(h) x 80mm(d) Weight 3 Kg Certications **FCC&CE Compliant**







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APPLICATIONS



AIRPORTS

CRITICAL INFRASTRUCTURE

Gas industry private sector

SEAPORT & WATER FACILITIES Dams & Waterfalls

ELECTRIC & UTILITIES

Power plants, Power sub stations

OIL & GAS

Oil field, Pipelines Pump stations, Refineries

DEPLOYABLE SOLUTIONS

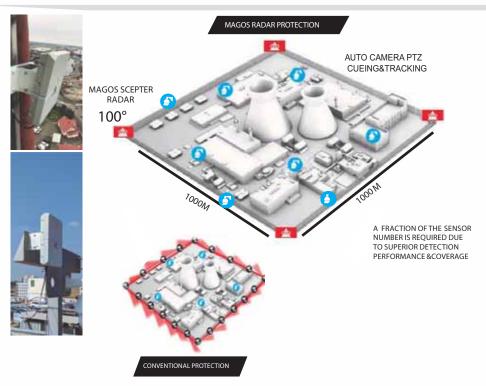
Anti cattle and equipment theft, Large Estate Protection, Large

HIGH SECURITY AREA

Prisons

VIRTUAL FENCES

Private sectors, Logistic centers Small sites, Parking lots, Border Gap Filling, Government facilities, Base/FOB protection



MAGOS AREA SURVEILLANCE SOFTWARE - MASS





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Unmanned Aerial System
One stop UAS solution for civil and military applications

| Compared to the compared t

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PD-1 Unmanned Aerial System

Designed for areal video surveillance in real time, aerial photography and other applications. Can be operated in different weather conditions. Our UAV is equipped with encrypted digital data link which offer high level of protection against any interference by third-party. Integrated gyro-stabilized gimbal provides superior video quality and detailed view of the target, combines with a HD video downlink it allow to stream the Full HD video in real time up to 50 km.



USG-202 Gyro-stabilized gimbal

- ▶ Full HD camera with 30x optical zoom
- ► High quality IR camera
- 360 degree rotation
 Target and scene tracking
- ► Weather sealed

Ground Control Station

- ▶ 85 KM Digital Data Link
- ► 1000 cd/m² HD screen
- ► 5 hours battery endurance
- ► Antennas included
- Rugged case



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Pavload



Operational Ceiling

VTOL capability combined with the operational safety of a ducked fan and the endurance of a fixed-wing aircraft, the V-Bat has revolutionized the market. Easily transported with a near-zero footprint, the







- » Gas, Heavy Fuel, and Electric Options
- » Runway Independent
- » Near zero footprint
- » 5 10 lb payload
- » Dash speed 90 kts
- » Tactically doployable in winds up to 25 kts
- » No exposed rotors for maximum operational safety
- » High endurance with excellent dash speed
- » Easily transportable in vehicles, boats, & helicopters
- » Simple, Safe, Reliable
- » Durable designed to "tip-over" with no damage
- » Seamless operation from urban canyons and ship decks
- » Uniquely suited for Perch & Stare operations
- » Ideal for maritime operations
- » Mechanically simple, tactically deplorable
- » Flexible command/control and data-link options

Sensor Options

EO/IR, SWIR, MWIR, Laser Designator, SIGINT, and more...

Ideal For...

- » ISR
- » Shipboard Operations
- » Tactical Operations
- » And More...
- » Urban Operation
- » Border Security
- » Counter UAS



MAKE IN INDIA





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