



OUR PRODUCTS

CATALOG



10 YEARS OF PRODUCT DEVELOPMENT



NATO Stock Number

2360-61-019-2278

BEETLE

GROUND ROBOTIC
SYSTEM

BEETLE is a versatile unmanned ground vehicle for performing logistical, reconnaissance, and evacuation missions in combat zones. Equipped with a durable tracked base, the complex is capable of operating in difficult conditions without the involvement of an operator.

- The modular design allows quick reconfiguration of equipment for specific missions.
- Remote control ensures safe operation in the risk zone.
- Image transmission from cameras allows for full control over the situation.
- Autonomous mode for performing typical actions is supported.

SPEED & EFFICIENCY:



Ready to use.
Wireless remote control (Starlink)

MOBILITY



Transported by a car trailer.

SAFETY



It has a lightly armored hull.



NATO Stock Number

1440-61-018-5942

DRAGON

MOBILE LAUNCHER



VERSATILITY



P-60 (AA-8 Aphid): range up to 5 km

P-73 (AA-11 Archer): range 10–15 km

AIM-9M Sidewinder: range 8–10 km

AIM-9X Sidewinder: integration in development

TIME TO BECOME OPERATIONAL



deployment time: up to 15 min

time to ready-to-fire: up to 120 s

AUTONOMY



active operating mode: 8 h

standby mode: 14 days

NITROGEN COOLING SYSTEM



Capability of using the transporter-loader vehicle for nitrogen charging and missile reloading

ROTATION



360°

SILENT OPERATION



no noise in active operating mode

OPERATING RANGE



from –35°C to +60°C

This platform also operates using data received from the radar.

MOBILE LAUNCHER FOR
LAUNCHING AIRCRAFT
MISSILES

DRAGON

Designed to engage aerial targets of varying speeds from the ground using air-to-air guided missiles equipped with an infrared homing seeker.



CONTROL & COMMAND

The system is automatically controlled from a remote control unit via a 100 m cable connection or through a wireless channel via Starlink.

Additionally, it can be equipped with a remote target designation system, target direction determination, and automatic target tracking through external radar systems.

Modification	Type of aircraft missiles used	Type of aircraft launcher	Number of missiles	Type of launch module	NATO Stock Number (NSN)
Mod1	AIM-9M	LAU-7/A	3	M9	1440-61-018-5942
Mod2	AIM-9M, P-73	LAU-7/A, P-72 (APU-73)	2, 1	M9, H73	1440-61-018-6729
Mod3	P-73	P-72 (APU-73)	3	H73	1440-61-018-6730
Mod4	AIM-9M, P-73	LAU-7/A, P-72 (APU-73)	1, 2	M9, H73	1440-61-018-6731



BALOO

TRANSPORT-LOADING
VEHICLE



OVERALL DIMENSIONS

✓ 1500x3800 mm

WEIGHT

✓ 1300 kg

STOCK

✓ Missile capacity: up to 8 units

✓ Nitrogen supply capacity: for 4
DRAGON units

WORKING PRESSURE IN CYLINDERS

✓ 350 bar

TRANSPORT-LOADING VEHICLE

BALOO

Designed to transport rocket and nitrogen supplies for DRAGON products. Simultaneously transports 6 - 8 rockets (8 AIM-9 rockets or 4 AIM-9 rockets and 2 R-73 rockets) and 240 liters of nitrogen.

KEY CAPABILITIES:

This trailer carries 6 nitrogen cylinders (40 L each). That is enough to fully refuel 4 DRAGON units.

To simplify missile loading onto the launcher, the trailer is equipped with a crane.

- Crane lifting capacity: 200 kg
- Maximum trailer payload: 1300 kg



NATO Stock Number

1430-61-017-9405

SEADRAGON

MOBILE SURFACE-TO-AIR
MISSILE SYSTEM



VERSATILITY

- ✓ R-73 (AA-11 Archer): range 10–15 km
- ✓ AIM-9M Sidewinder: range 8–10 km
- ✓ AIM-9X Sidewinder: integration in development

TIME TO BECOME OPERATIONAL

- ✓ deployment time: up to 120 s
- ✓ time to ready-to-fire: up to 120 s

AUTONOMY

- ✓ active operating mode: 8 h
- ✓ standby mode: 14 days

NITROGEN COOLING SYSTEM

- ✓ equipped with additional nitrogen (argon) gas cylinders and a pressure monitoring system on the remote control panel.
- ✓ the possibility of using a transport-loading vehicle for nitrogen refueling and reloading missiles

SILENT OPERATION

- ✓ no noise in active operating mode

OPERATING RANGE

- ✓ from -35°C to $+60^{\circ}\text{C}$
- ✓ system stabilization: up to Sea State 3

MOBILE SURFACE-TO-AIR MISSILE SYSTEM

SEADRAGON

The mobile surface-to-air missile system SeaDRAGON H73/M9 is designed to control two R-73 (AA-11 Archer) missiles on launchers (pylons) P-72 or LAU-73D mounted on the SeaDRAGON platform. It can also use the H73 and/or M9 module for AIM-9M/X missiles with the LAU-9 launcher.

The system is equipped with a hardware and software module for communication and guidance of two R-73/AIM9M/X air-to-air guided missiles with a thermal imaging homing head and a visual surveillance unit (from 2 km to 12 km).



Control is performed via a remote satellite-communication console such as Starlink (or equivalent). The platform is transportable and can be towed on a trailer using a standard pickup truck.

SIRENA

AUTONOMOUS NAVAL PLATFORM FOR
ADAPTIVE ELECTRONIC SUPPRESSION



OPERATIONAL RANGE

✓ up to 800 km

MAXIMUM SPEED

✓ up to 90 km/h

PAYLOAD CAPACITY

✓ up to 300 kg

ENDURANCE

✓ up to 24 hours

SUPPRESSION RANGE

✓ up to 30 km

FREQUENCY COVERAGE

✓ 300-6000 MHz

AUTONOMOUS NAVAL PLATFORM FOR ADAPTIVE ELECTRONIC SUPPRESSION

SIRENA

SIRENA is a fully autonomous unmanned surface vessel engineered for electronic warfare operations in contested naval environments. Its multi-band jamming suite covers 300–6000 MHz, enabling simultaneous suppression of hostile communications, GNSS navigation signals, and UAV control links at stand-off ranges up to 30 km.



The platform operates in autonomous, semi-autonomous or remote control modes with no line-of-sight dependency. Sustaining up to 24 hours of continuous operation at ranges up to 800 km, SIRENA delivers persistent electronic denial, maritime reconnaissance support, and rapid-response coastal protection across both littoral and offshore zones.



NATO Stock Number

1425-61-017-6375

DRAGON H73 H

MOBILE SURFACE-TO-AIR MISSILE
SYSTEM BASED ON AN ARMORED
VEHICLE



VERSATILITY

- ✓ R-60 (AA-8 Aphid): range up to 5 km
- ✓ R-73 (AA-11 Archer): range 10–15 km
- ✓ AIM-9M Sidewinder: range 8–10 km
- ✓ AIM-9X Sidewinder: integration in development

TIME TO BECOME OPERATIONAL

- ✓ deployment time: up to 15 min
- ✓ time to ready-to-fire: up to 120 s

AUTONOMY

- ✓ active operating mode: 8 h
- ✓ standby mode: 14 days

NITROGEN COOLING SYSTEM

- ✓ Possibility of using a transport-loading vehicle for nitrogen refueling and rocket reloading

ROTATION

- ✓ firing sector:
360°

SILENT OPERATION

- ✓ no noise in active operating mode

OPERATING RANGE

- ✓ from –35°C to +60°C

MOBILE ANTI-AIRCRAFT MISSILE SYSTEM BASED ON AN ARMORED VEHICLE

DRAGON H73 H

is an independent combat mobile anti-aircraft missile firing unit for performing tasks of firing air-to-air missiles from the ground to the surface at air targets.

The complex provides for the use of R-73 and R-60 aircraft missiles to engage air targets of different speeds that meet the capture parameters of the thermal imaging homing heads of these missiles.

The car is reserved by the manufacturer of the complex.



LAU-73D

LAUNCHER



Rail-type launcher for launching R-73 aircraft missiles. The design of the device adapts the R-73 for firing from ground-based or surface-based launchers (systems), including sea-based ones.

KEY FEATURES:

- Unification for compatibility with DRAGON-type systems
- Taking into account the peculiarities of launching an aircraft missile from a non-aircraft platform
- Reinforced design to withstand loads when launched from land and sea

Modification	Appointment	Description
Mod1	for ground use	electronic units are installed inside the housing
Mod2	for surface use	electronic units are moved to the onboard compartment of the surface platform

LAU-9D

DEVELOPMENT OF LAUNCHING
DEVICES

KEY DEVELOPMENT DIRECTIONS:

- Unification for compatibility with DRAGON-type systems for firing AIM-9 missiles
- Taking into account the features of launching from non-aviation platforms of various bases
- Reinforced design to withstand loads when launching missiles from land-based or hovering mobile platforms



RAVEN

REMOTE TARGETING
MODULE



VERSATILITY



Receiving target coordinates from external sources via a secure communication channel. Sources can be separate radars or aggregation systems that include various target detection means.

AUTONOMY



Automatic processing of input data with subsequent transmission of target coordinates to the weapons control unit

CAPABILITIES



Synchronization with a digital terrain map, allowing you to visualize the location of targets and objects in real time

REMOTE TARGETING MODULE

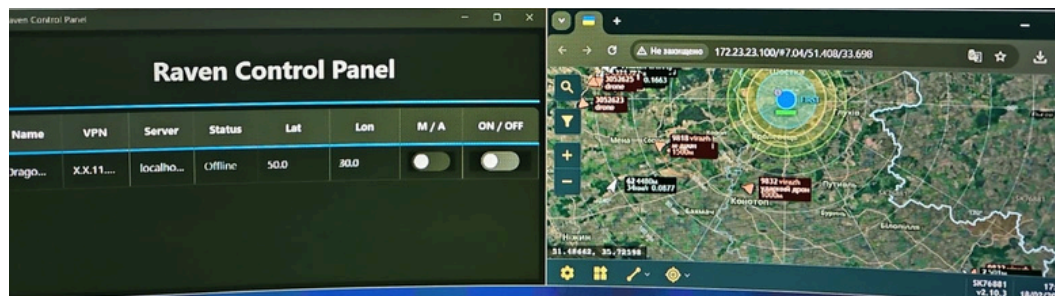
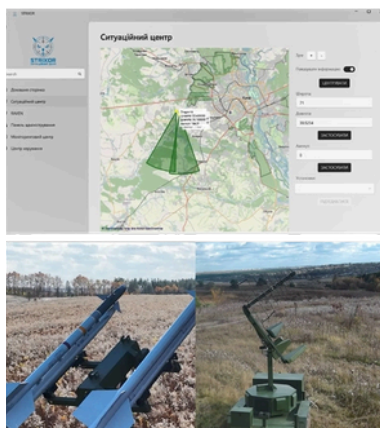
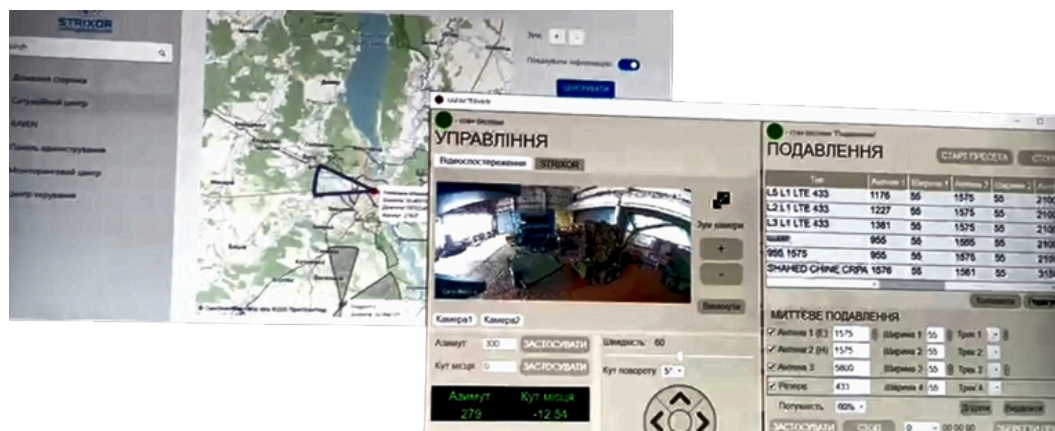
RAVEN

FOR AIR TARGET ENGAGEMENT SYSTEMS

The RAVEN module is designed to ensure high-precision, automated interaction between ground- and air-based systems and external surveillance and air-target detection systems.

THE DELIVERY SET INCLUDES:

- A rugged military-standard laptop (moisture-protected, shock-resistant, dustproof), pre-configured to work with the module
- “RAVEN Control panel” software, which provides the full processing cycle for a specific weapon system, including visualization
- The RAVEN remote targeting module consists of a hardware unit (which can be a standalone product or integrated into the required weapon system) and a software application that must be installed either on a server with data-aggregation systems or on the end user's laptop



AIRDRAGON

HIGH-PRECISION AIR DEPLOYMENT PLATFORM



AirDRAGON is designed for integrating and deploying guided munitions from a light aircraft platform. The system provides communication between the control units of installed payloads and their guidance systems, ensuring effective operation across various combat scenarios.

The system provides communication between the control units of installed payloads and their guidance systems, ensuring effective operation across various combat scenarios.

The platform includes a hardware-and-software module that enables uninterrupted communication between the control and guidance units, allowing remote control and real-time target adjustment. It is equipped with an independent power supply and an optical surveillance module that provides situational awareness and enhanced guidance capability (effective up to 7 km).

KEY CAPABILITIES:

- Modular design compatible with various payload types
- Remote control via a secure communications channel (e.g., Starlink)
- Lightweight and transportable; suitable for deployment using a standard pickup truck with a trailer
- Improved guidance and targeting system for higher mission effectiveness

KVP-M3

INFRARED HOMING HEAD COUNTERMEASURE SYSTEM



The system generates four types of signals in the infrared range simultaneously into the surrounding space, which affect the infrared homing head.

When exposed to the KVP-M3, the homing head receives interference that causes it to deviate from the target or fail to lock onto the target altogether.

Under the influence of radiation from the KVP-M3, the homing head's gyroscope deviates from the target and loses the ability to reacquire the target.

The KVP-M3 is designed to counteract homing heads of missiles that have amplitude-phase (AF), frequency-phase (FP), time-pulse (TP), or pulse (with spectral selection) signal modulation. At the same time, it ensures a large deviation of the missile from the target or completely blocks the missile's launch from the launcher.

To protect an aircraft or helicopter, the KVP-M3 system is installed next to the heat-emitting part, which is either the engine or the exhaust gas outlet. It is activated during takeoff or when the threat proximity sensor is triggered.

KVP-M3

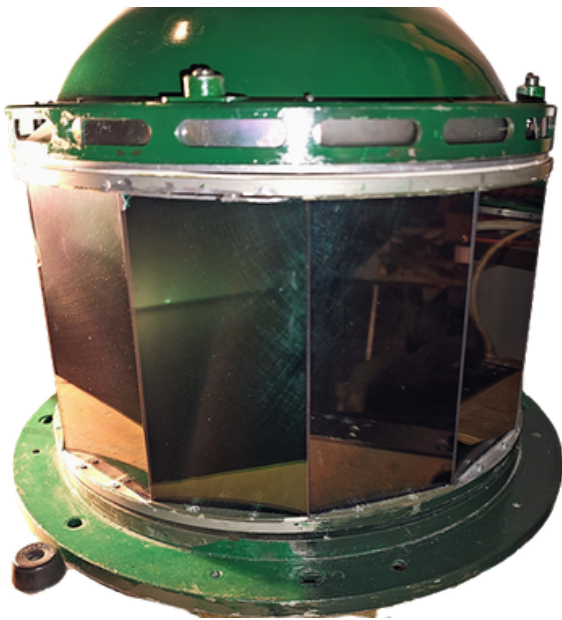
INFRARED HOMING HEAD COUNTERMEASURE SYSTEM



N	Station type	"Lipa"	"AN/ALQ-144"	"President-C"	"Adros KT-01 AVE"	«KVP-M3»
1	Purpose	Protecting helicopters from portable anti-aircraft missile systems	Protection of helicopters (AH-1 G, Q, F; AH-64) from MANPADS	Protecting helicopters from missiles with IVS	Protecting helicopters from missiles with infrared homing heads	Protection of helicopters, small aircraft, UAVs, unmanned platforms, strike robotics, and other vehicles from missiles with IGS
2	Type of infrared homing heads (IHS) suppressed by the station	Infrared homing heads with AFM	Infrared homing heads with AFM, CFM	IGS with AFM, CFM, and IM (Including IGS with spectral selection)	Infrared homing heads with AFM, CFM, VIM	IGS with AFM, CFM, VIM, and IM (including IGS with spectral selection)
3	The need for false thermal targets in the protection complex	yes	yes	yes	yes	Not necessarily
4	Weight of the protection complex	Weight of SHOEP + Weight of 2 EVUs (96 kg)	13.6 kg excluding EVU	Weight of 3 SHOEP blocks (330 kg) + weight (600 kg) of additional complex devices	Weight of SHOEP + Weight of 2 EVUs (96 kg)	Weight of SHOEP 12 kg
5	The presence of a controlled information field created by the station during radiation modulation	no	no	no	3-dimensional controlled information field	4-dimensional controlled information field
6	Energy costs for creating obstructive infrared radiation	3 kW	1.7 kW	18.6 kW (For 3 units of the complex's SHOEP)	3.5 kW	From 1 to 3 kW
7	Radiation power of the protected object (measurement without EVU) no more than	60 W/ster	70-130 W/ster	100 W/ster	80 W/ster	From 120-400 W/ster
8	Probability of not hitting the target		0,5-0,6	0,8	0,7-08	0,8

KVP-M3

INFRARED HOMING HEAD COUNTERMEASURE SYSTEM



No	Name	Meaning	Note
1	Helicopter protection zone (degrees) By azimuth / by angle of location	60-300/±30	
2	Effective countermeasure range for infrared homing heads (m)	50-5000	Depends on the type of infrared homing head, UAV flight altitude, atmospheric conditions
3	Radiation range	Infrared	Corresponds to the range of infrared homing heads of guided missiles
4	Station radiation power in the range of 2-5.5 μm (W/m²)	100-400	Depends on the power of the installed IR emitter
5	DC/AC power supply voltage (V)	27 and 208 400Hz	Power up to 3000 VA
6	Ready time after switching on (min)	from 15 seconds to no more than 1 minute.	
7	Dimensions (mm): diameter; height of outer part/recessed part	No more than 310; 260/170	The outer part is located above the fuselage.
8	Electromagnetic compatibility	Does not affect the operation of onboard radio equipment	No radiation in the radio frequency range
9	Weight (kg)	Around 12	

NATO Stock Number

5865-61-017-5991

SCORPION V2

KHARAKTERNYK

FREQUENCY **500-3500** MHz



EFFECTIVE REJECTION BANDWIDTH



500-3500 MHz

DEPLOYMENT TIME



up to 10 minutes

AUTONOMY



active operating mode: up to 4 hours
standby mode: up to 24 hours

ROTATION



360°

OPERATIONAL RANGE



from -20°C to +60°C

**ELECTRONIC WARFARE
COMPLEX**

SCORPION V2

The system is designed to counter enemy reconnaissance and strike UAVs such as Orlan-10/30, Supercam, Zala, Lancet, Shahed, FPV, and others.

Easily integrates with domestic fire support systems via API, increasing the effectiveness of combat missions



KEY CAPABILITIES:

- radio frequency DDoS attack – overloads enemy receivers by introducing modified signals;
- countering drones – disrupts telemetry, control channels and satellite navigation;
- jamming and spoofing – creating obstacles to disable enemy communication systems;
- mobility and rapid deployment – rapid change of position and adaptation to the combat situation.



NATO Stock Number

5865-61-018-5597

SCORPION V3

KHARAKTERNYK

FREQUENCY **100-6000** MHZ



EFFECTIVE JAMMING BANDWIDTH

✓ 100:6000 MHz

DEPLOYMENT TIME

✓ up to 10 minutes

AUTONOMY

✓ active operating mode: up to 100 hours
standby mode: 14 days

ROTATION

✓ 360°

OPERATING RANGE

✓ from -20°C to +60°C

ELECTRONIC COMBAT COMPLEX

SCORPION V3

SCORPION V3 is an advanced electronic warfare system designed to suppress and neutralize enemy drone control and communication systems.

Using software-defined radio (SDR) and digital signal processing (DSP), it performs high-precision jamming and signal manipulation to counter UAV threats.



KEY CAPABILITIES:

- Radio-frequency DDoS attack for suppression, disorientation, and disabling enemy UAV control systems;
- Counter-drone action — disrupts telemetry, control channels, and satellite navigation;
- Radio jamming and spoofing — creates interference to disable enemy communication systems;
- Mobility and rapid deployment — rapid relocation and adaptation to battlefield conditions;
- Simultaneous suppression of enemy devices within the EW engagement zone (38° vertical, 38° horizontal).



Integration:

Compatibility with Ukrainian fire-support systems (Virazh, Kropyva, Aisberg).
Support for PLRS and radar guidance for high-precision strikes.
API access for seamless integration into combat systems.

NATO Stock Number

5865-61-018-5601

SCORPION V4

KHARAKTERNYK

FREQUENCY **100-6000** MHz

EFFECTIVE JAMMING BANDWIDTH

✓ 100–6000 MHz

DEPLOYMENT TIME

✓ up to 10 minutes

AUTONOMY

✓ active operating mode: up to 100 hours
standby mode: up to 8–10 days

ROTATION

✓ 360°

OPERATING RANGE

✓ from –30°C to +60°C



ELECTRONIC WARFARE COMPLEX

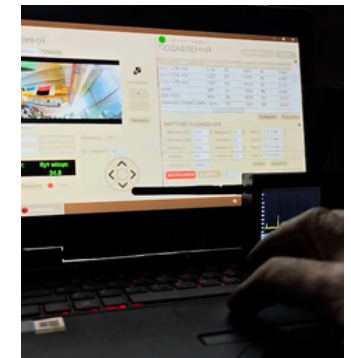
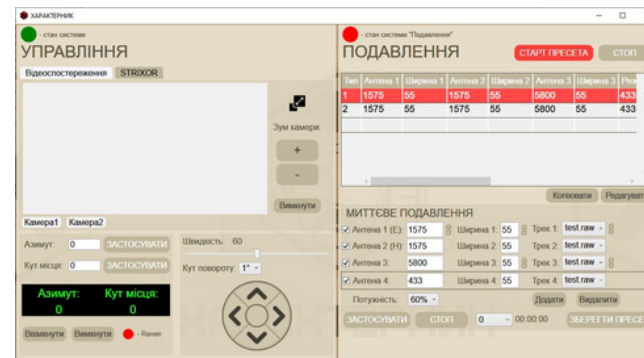
SCORPION V4

SCORPION V4 is an innovative platform that combines electronic warfare and electronic intelligence capabilities. By integrating software-defined radio (SDR), digital signal processing (DSP) and panoramic frequency analysis, SCORPION V4 provides simultaneous detection, analysis and neutralization of threats in real time.



KEY CAPABILITIES:

- Countering drones: active suppression of control, telemetry and navigation channels (GPS/GLONASS);
- Radio jamming and spoofing: creating interference for enemy communication systems;
- Real-time spectrum analysis: determining signal sources with identification, type, amplitude and frequency;
- Detection of UAVs, electronic warfare, mobile phones and other devices - up to 15 km (depending on the mode);
- Rapid deployment and mobility: adaptation to the combat situation.



Integration:

Compatibility with Ukrainian fire-support systems (Virazh, Kropyva, Aisberg).

Support for PLRS and radar guidance for precision strikes.

API access for seamless integration into combat systems.

Remote control via PC, laptop, or tablet over the network.

DOLPHIN



SPECTRUM ANALYZER

OPERATING FREQUENCY RANGE



70–6000 MHz

SIMULTANEOUS ANALYSIS



up to 5 bands

AUTONOMY



active operating mode: up to 12 hours
standby mode: 14 days

DEPLOYMENT TIME



up to 15 minutes

POWER SUPPLY



220V

OPERATING TEMPERATURE RANGE:



from -35°C to $+60^{\circ}\text{C}$



SPECTRUM ANALYZER

DOLPHIN

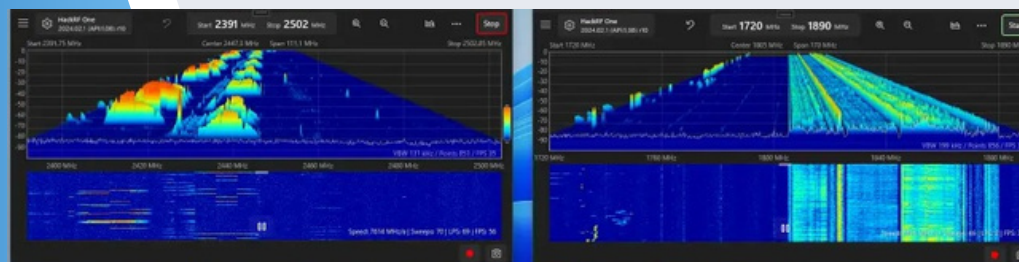
The Dolphin spectrum analyzer is designed to detect various types of signals, including signals from enemy UAVs, electronic warfare (EW) systems, radio equipment, mobile phones, and more.

It is a panoramic spectrum analyzer with a built-in signal generator, capable of displaying signal spectra across a wide frequency range from 70 to 6000 MHz. It enables determination of the amplitude and frequency of spectral components within a signal.

CAPABILITIES

Dolphin is designed for rapid analysis of the radio-frequency environment and processes signals across all widely used technologies: Wi-Fi, 2G, 3G, 4G, LTE, CDMA, DCS, GSM, GPRS, GLONASS, and others. The key feature is simultaneous real-time analysis of 1–5 bands with frequency scanning.

The device software provides measurement, storage, and analysis of spectrograms, with the option of both local and remote control via tablets, laptops, PCs, and the Internet.



Detection log				
LTE 2600 UpLink	Frequency: 2518 MHz	Power: -99.3 dB	Start Time: 12/11/2024	
End Time: 12/11/2024 11:11:59 AM	Duration: 0:00:08			
LTE 2600 UpLink	Frequency: 2524.02 MHz	Power: -95.2 dB	Start Time: 12/11/2024	
End Time: 12/11/2024 11:11:43 AM	Duration: 0:00:04			
LTE 2600 UpLink	Frequency: 2533.49 MHz	Power: -97.6 dB	Start Time: 12/11/2024	
End Time: 12/11/2024 11:10:45 AM	Duration: 0:00:07			
GSM/LTE 1800 UpLink	Frequency: 1720.1 MHz	Power: -85.6 dB	Start Time: 12/11/2024	
End Time: 12/11/2024 11:08:00 AM	Duration: 0:00:18			
GSM/LTE 1800 UpLink	Frequency: 1727.1 MHz	Power: -91.9 dB	Start Time: 12/11/2024	
End Time: 12/11/2024 11:07:25 AM	Duration: 0:00:07			
GSM/LTE 900 UpLink	Frequency: 894.02 MHz	Power: -71.1 dB	Start Time: 12/11/2024	
End Time: 12/11/2024 11:07:15 AM	Duration: 0:00:07			
GSM/LTE 1800 UpLink	Frequency: 1756.15 MHz	Power: -48.9 dB	Start Time: 12/11/2024	

HYMERA LITE

ALL-BAND GNSS NAVIGATION
ANTENNA WITH ANTI-JAMMING
AND ANTI-SPOOFING



General Information	
Operating Frequency Range	GPS: L1 / L2 / L5 GLONASS: G1 / G2 BEIDOU: B1 / B2 / B3 GALILEO: E1 / E5a / E5b / E6 QZSS: L1 SBAS: L1 L-Band
Architecture	Quadrifilar Helix
Nominal Impedance	50 Ohm
Polarization	RHCP
Axial Ratio	≤1,5 dB
Mounting	3 x M3 screws at the base
Connector	6 pin connector GPS
Power Consumption	≤45 mA
Material Type	ABS+PC
Climatic Data	
Operating Temperature	from -40°C to +85°C
Storage Temperature	from -45°C to +85°C
Enclosure Protection	IP67
Frequency Range	1164 MHz ~ 1278 MHz 1525 MHz ~ 1615 MHz
Physical Dimensions	
Weight, grams	555
Height, mm	70
Diameter, mm	160

HYMERA PRO

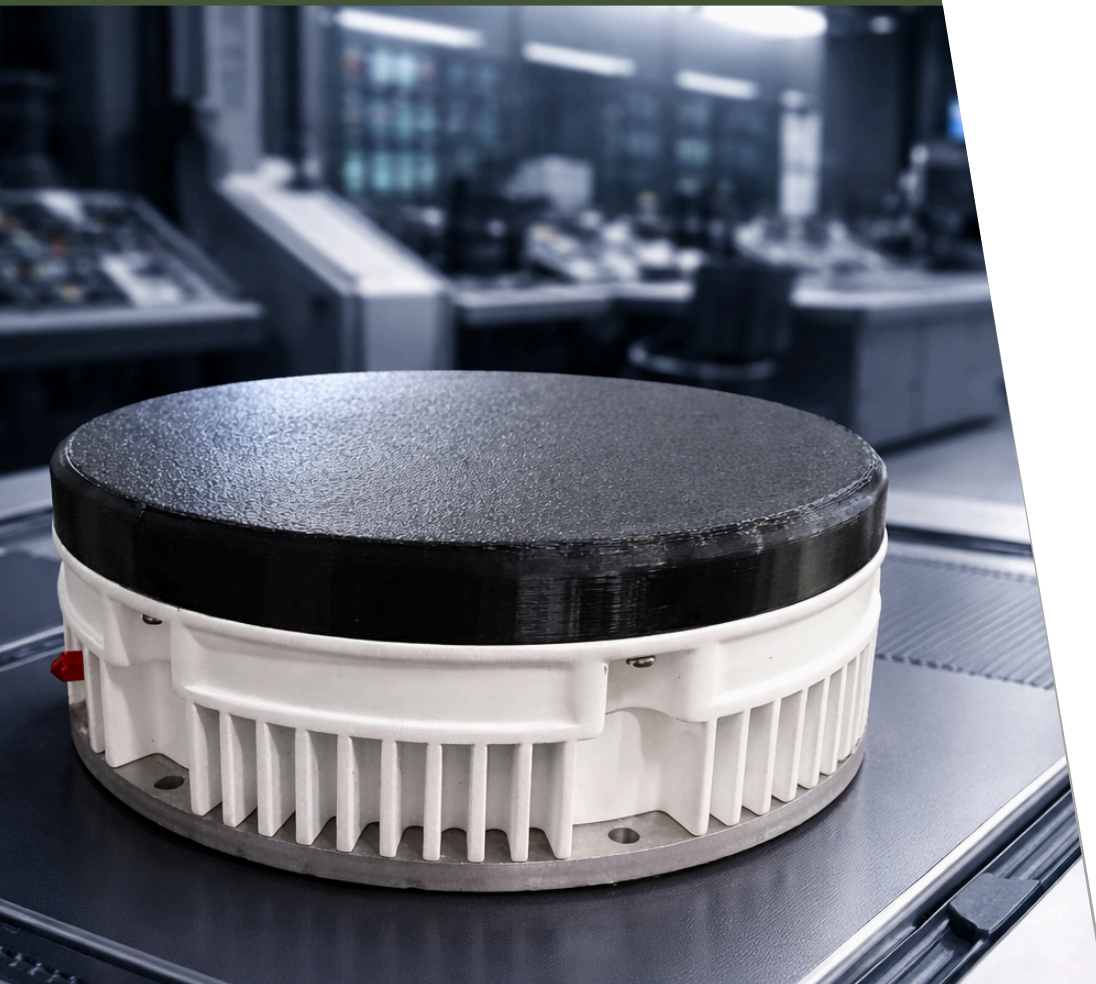
NAVIGATION ANTENNA
WITH CONTROLLED RADIATION
PATTERN CRPA



General Information:	
Operating Frequency Range:	L1 (GPS): 1575.42 MHz R1 (GLONASS): 1602 MHz E1 (Galileo): 1575.42 MHz B1 (BeiDou): 1561.098 MHz
Number of channels:	4 channels: GPS, GLONASS, Galileo, BeiDou
Interference Suppression (ISR)	Single-band: 90–95 dB; Tri-band: 80–85 dB
Navigation Accuracy under Interference:	Horizontal ≤ 10 m, vertical ≤ 10 m, speed ≤ 0.2 m/s
Data transfer interface:	RS-232C: 9600–115200 bps; USB: 9600–921600 bps
Output data format	NMEA 0183 (GGA, GLL, GSA, GSV, RMC, VTG, TXT) or the u-blox protocol
Power supply / Power consumption	DC 12–24 V / ≤ 15 W
Data rate / clock rate	9600–921600 bps / 20 Hz
Positioning accuracy (1σ)	≤ 10 m (horizontal and vertical)
Velocity accuracy	≤ 0.2 m/s
Operating temperature	–40 to +85 °C
Dimensions (excluding connectors):	140 × 140 × 28 mm
Weight	790 g

HYMERA PRO PLUS

8-CHANNEL L1
INTERFERENCE
PROTECTION SYSTEM



ADAPTIVE BEAMFORMING

-  The system automatically creates “nulls” in the antenna radiation pattern in the direction of interference sources.

COMPATIBILITY

-  The device is installed between the antenna and a standard navigation receiver (e.g., u-blox) without requiring any changes to the receiver’s software.

ANTI-SPOOFING PROTECTION

-  In addition to interference suppression, the architecture helps distinguish real satellite signals from simulated (spoofed) signals.

QUICK INSTALLATION

-  The compact size allows the module to be installed on medium- and heavy-class drones, as well as on mobile ground platforms.

8-CHANNEL L1 INTERFERENCE PROTECTION SYSTEM

HYMERA PRO PLUS

This device is a high-performance multi-channel digital signal-processing system designed to suppress intentional radio-frequency interference (EW). It ensures stable operation of GNSS navigation receivers in difficult conditions by “cutting out” interference signals and amplifying useful satellite signals.

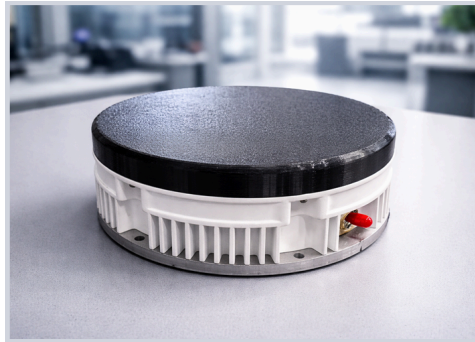
TECHNICAL SPECIFICATIONS

OUTPUT SIGNAL PARAMETERS

Gain: 40 dB $\pm$ 2 dB
Noise Figure: $\leq$ 3.5 dB
Group Delay: $\leq$ 50 ns
Output Impedance: 50 Ω

OPERATING CONDITIONS

- Operating temperature: -40°C to $+85^{\circ}\text{C}$
- Humidity: up to 95% (non-condensing)
- Protection rating: IP67 (in a waterproof housing)



PHYSICAL & ELECTRICAL PARAMETERS

Supply voltage: DC 9–36 V (wide range for vehicles and UAVs)
Power consumption: $\leq$ 15 W
Interface connector: RF connector, SMA-K type
Module dimensions: approx. 120 × 85 × 30 mm (may vary by housing)
Weight: 450 g

INTERFERENCE SUPPRESSION CHARACTERISTICS

Antenna channels: 8 (antenna array mass $\approx$ 1+)
Types of interference suppressed: narrowband, wideband, pulsed, and direction-of-arrival interference
Interference rejection: $\geq$ 80 dB (for wideband interference) / $>$ 90 dB (for narrowband)
Number of simultaneous interference sources: up to 7 narrowband sources at once
Signal recovery time: $<$ 1 ms after interference is suppressed or changes

KIT CONTENTS (TYPICAL)

- Main signal-processing unit
- Active 8-element antenna array
- RF feeder cable (connection cable)

OPERATING FREQUENCIES & SIGNALS

Supported systems: GPS L1, BeiDou B1, Galileo E1, GLONASS G1
Center frequencies: 1575.42 MHz (GPS/Galileo) / 1561.098 MHz (BeiDou) / 1602.000 MHz (GLONASS)
Bandwidth: $\geq$ 20 MHz (adaptive)

PINOCCHIO M2

UAV



WINGSPAN

✓ 232 cm

LENGTH

✓ 182 cm

WARHEAD WEIGHT

✓ 10 kg

FLIGHT RANGE

✓ 600 km

**EQUIPPED WITH SELF-DEVELOPED COMPONENTS AND
COMPONENTS MANUFACTURED IN UKRAINE**

PINOCCHIO M2

Designed to perform combat missions to engage enemy manpower and lightly armored targets from the air. PINOCCHIO M2 is designed for autonomous operation with takeoff using a launch equipment kit.

CONTROL & MONITORING

Control via Starlink.

CRP ANTENNA: HYMERA NAVIGATION

The GNSS antenna for use on drones provides stable reception of satellite navigation in the L-band and supports a wide range of systems: GPS (L1/L2/L5), GLONASS (G1/G2), Galileo (E1/E5a/E5b/E6), BeiDou (B1/B2/B3), as well as QZSS (L1) and IRNSS (L1). The antenna is made according to the architecture of a quadrifilar helix with RHCP polarization, has 50 Ohms and an axial ratio of ≤ 1.5 dB, operates in the ranges of 1164–1278 MHz and 1525–1615 MHz with a consumption of ≤ 45 mA. The robust ABS+PC housing with IP67 protection is designed for operation in conditions of $-40...+85^{\circ}\text{C}$. Product dimensions — $\varnothing 160 \times 70$ mm, weight — 555 g.



PINOCCHIO SOKIL

UAV



WINGSPAN

✓ 120 cm

LENGTH

✓ 140 cm

WEIGHT

✓ 10.5 kg
WITHOUT PAYLOAD

WEIGHT OF THE WAR UNIT

✓ 14 kg

FLIGHT TIME

✓ 30 min

MAXIMUM SPEED

✓ 240 km/h



**EQUIPPED WITH IN-HOUSE DEVELOPED
COMPONENTS AND COMPONENTS
MANUFACTURED IN UKRAINE**

PINOCCHIO SOKIL

Designed to perform combat missions to destroy enemy manpower and lightly armored targets from the air. SOKIL is designed for autonomous operation with takeoff using a launch equipment kit.

CONTROL & MONITORING

CRP ANTENNA: HYMERA NAVIGATION

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PINOCCHIO CARGO M1

UAV



WINGSPAN

✓ 4.2 m

LENGTH

✓ 2.8 m

WEIGHT

✓ 28 kg (without warhead)

✓ 53 kg with warhead

CRPA

✓ 2 antennas

CRUISE SPEED

✓ 100:110 km/h

MAXIMUM SPEED

✓ 180 km/h

FLIGHT RANGE

✓ 350 km (with 25 kg payload)
500 km (with 15 kg payload)
1000 km (with payload up to 10 kg)

**EQUIPPED WITH SELF-DEVELOPED
COMPONENTS AND COMPONENTS
MANUFACTURED IN UKRAINE**

PINOCCHIO CARGO M1

A strike ("kamikaze") unmanned aircraft of the aircraft type with a warhead for direct destruction of ground and surface objects.

MANAGEMENT AND CONTROL

GNSS: HYMERA TYPE SYSTEM

- wireless internet - STARLINK system
- optoelectronic surveillance video FPV and thermal imaging cameras

FEATURES

- easily replaceable warhead
- quick launch from a catapult-type launcher
- automatic and/or automated flight mode



DART



LENGTH

✓ 184 cm

THICKNESS

✓ 10 cm

WARHEAD

✓ 3.5–10 kg

NET WEIGHT

✓ 13 kg (without payload)

DART

This device is designed for release from a high-altitude balloon at an altitude of 12,000–18,000 meters.

Its control is carried out using servo actuators, which ensure accuracy and reliability during the release and subsequent activation.

If required, the device can be equipped with a solid-fuel motor, expanding its functional capabilities.



KEY FEATURES

- Design: Compact, aerodynamic body that ensures stability during release.
- Materials: Metal and composite elements to reduce weight while increasing strength.
- Mounting: Equipped with a reliable suspension mechanism for release from a high-altitude balloon.
- Mechanics: Includes electronic components and wiring enabling integration of additional control systems (autopilot control, target guidance via NAS Chymera).



SOVA CV/AI

SOFTWARE



The project is aimed at creating an intelligent UAV control system based on computer vision and machine learning. The main goal is to use onboard cameras to capture and process video streams in real time and make UAV control decisions. The system includes automatic tracking and recognition of objects, location estimation, and data exchange between the UAV and the operator.

KEY CAPABILITIES

Computer Vision

Use of libraries and tools for real-time video analysis and processing. Object detection and tracking algorithms help identify and determine the position of objects within the UAV's field of view.

Machine Learning

Use of pre-trained neural network models (YOLO) to detect objects in the video stream. This improves accuracy and increases processing speed in real-time operation.

Single-Board Computer (SBC)

The SBC serves as the main computing module for video processing and running computer vision and machine learning models thanks to a powerful graphics processor (GPGPU).

Kalman Filter

Used to predict and optimize the drone's flight trajectory based on camera and other sensor data, reducing the impact of noise.

PID Controller

Ensures flight stability and automatically adjusts UAV motion based on feedback. This enables smooth and precise control during tasks such as object tracking or in-flight stabilization.

GEDZ NAVIGATION

VIDEO NAVIGATION MODULE



This is a modern navigation module designed for integration into UAVs. It provides navigation under GPS jamming or spoofing conditions, AI-based obstacle avoidance, and long-range communications. It is equipped with a 3-axis stabilized gimbal and EO+IR cameras (35x zoom), multiple PP communication channels, and a built-in CRPA antenna to protect the GPS signal.

The system is compatible with ArduPilot and PX4, making it suitable for various UAV platforms, including quadcopters, VTOL UAVs, and fixed-wing aircraft. Thanks to the built-in thermal imaging camera, it also operates at night.

KEY CAPABILITIES

Cybersecurity

- Zero data transmission without user consent
- TAA and NDAA compliant
- MicroSD card encryption using AES-XTS with a 512-bit key
- Digitally signed firmware
- FIPS 140-2 compliant

Built-in AI Algorithms

- GNSS-denied flight: optical navigation
 - Night flight mode without GNSS
- Object tracking:
 - Target search and recognition (vehicles/people)
 - Tracking using a thermal camera
- Cursor on Target
- Obstacle avoidance system
- Automated high-precision landing

Sensors

- Satellite navigation: CRPA GNSS
- Barometer and magnetometer
- Front stereo cameras, downward stereo cameras, and a downward rangefinder
- 4 inertial measurement units (IMUs)

STRIXOR

A MULTI-COMPONENT
SITUATIONAL MONITORING
AND CONTROL SYSTEM



STRIXOR
SITUATION CENTER

SITUATIONAL CENTER

Geospatial monitoring module that provides real-time control of the location and status of all systems on a map.

MONITORING CENTER

Centralized video surveillance module designed for simultaneous viewing of video streams from all system cameras.

ADMINISTRATION PANEL

Centralized module for managing users and system units. Provides creation, editing, and control of objects and access rights in real time.

CONTROL CENTER — DRAGON

Operational control module for DRAGON-type units. Ensures safe granting or revoking of launch authorization and switching to detailed control of selected units.

RAVEN-MAP

Module for detecting and displaying airborne targets on a digital map. Receives coordinates from external sources (radar, electro-optical systems, UAVs, observation posts) and visualizes them in real time.

CONTROL CENTER

Remote control module providing access to computers and unit control blocks. Enables remote connection and real-time equipment control.

STRIXOR

A MULTI-COMPONENT SITUATIONAL MONITORING AND CONTROL SYSTEM

The system provides comprehensive real-time control over the location and status of proprietary devices, units, and users by combining monitoring, video surveillance, and operational control functions. It creates a complete operational picture, enabling operators to monitor object activity and issue commands safely and efficiently.

REAL-TIME OPERATION

Instant updates of coordinates, status, and events on the map with no delays, ensuring up-to-date situational awareness for operators.

LOCAL VISUAL REPRESENTATION

Displays the exact geolocation of each unit or object, as well as coverage zones and observation sectors.

MAP WORKFLOW

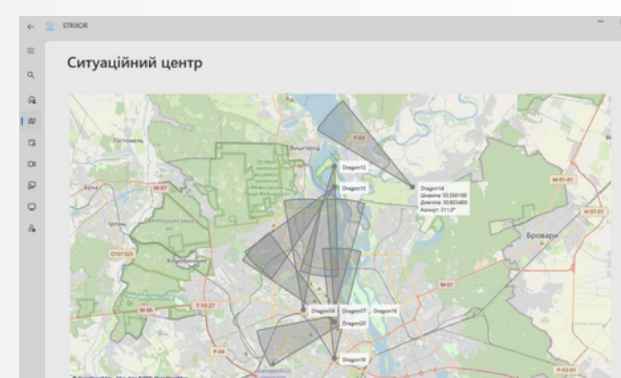
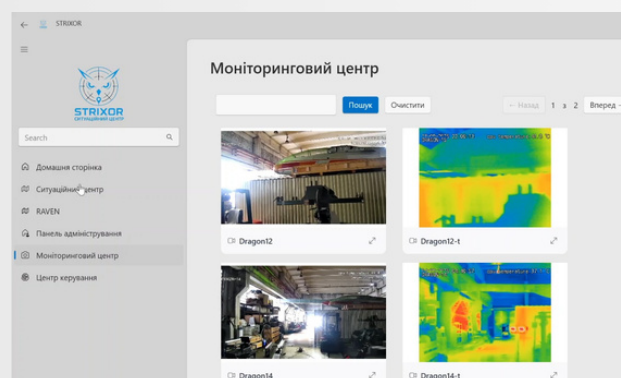
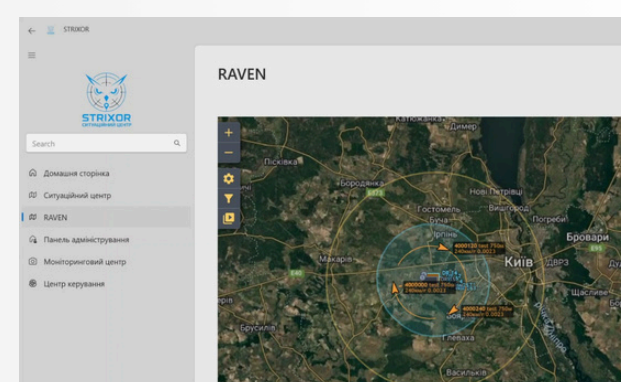
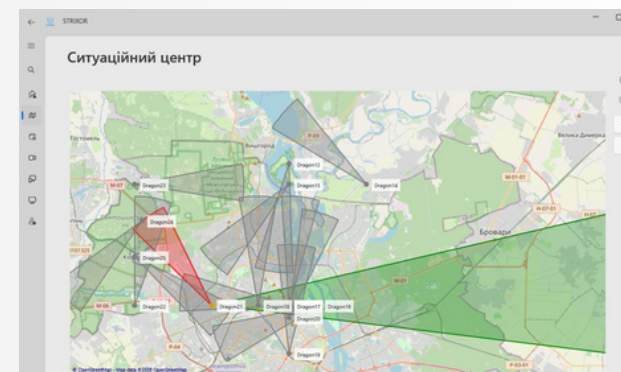
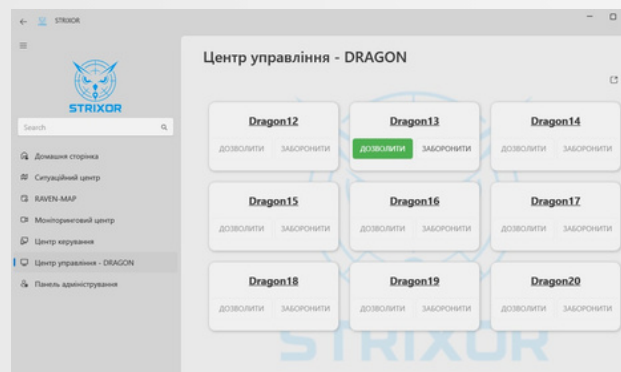
Smooth switching between an overall area view and detailed views of local zones, enabling equally effective control of both the entire system and individual objects.

SECURITY & ACCESS

Data exchange between modules and external sources is carried out via secure encrypted channels, taking into account user roles and access permissions.

FLEXIBLE OPERATOR INTERFACE

Supports multi-window workflows, multiple screens, and video walls. The operator can work simultaneously with the map, video streams, control panels, and administrative tools in a single interface.



CONFINE

AUTONOMOUS DETECTION SYSTEM



SENSOR CHANNELS



Visual Thermal (LWIR)

VISUAL RESOLUTION



up to 1080p / 30 fps

POWER CONSUMPTION



3–8 W

COMMUNICATION



LTE/4G Wi-Fi LoRa Ethernet

CONFINE

AUTONOMOUS DETECTION SYSTEM



Multi-channel autonomous detection system with visual and thermal sensors for long-term field deployment and real-time geotagged data transmission

CONFINE is a multi-channel autonomous surveillance and detection system combining visual (5–12 MP, up to 1080p/30 fps) and thermal (LWIR 8–14 μm , 320x240) sensor channels with multi-sensor fusion processing on a 4x ARM Cortex-A72 platform. The system detects moving objects across the full visual and thermal spectrum, captures geotagged photo and video, and transmits data in real time via four independent communication channels simultaneously.

Communication redundancy is built in at architecture level — LTE/4G as primary channel, with Wi-Fi, LoRa telemetry, and Ethernet/optical link as fallback, all accessible via VPN secure remote connection. Data output supports HTTP POST, MQTT, REST API, and push notifications via Telegram and webhooks. The system operates on 3–8 W from a 2S–3S Li-ion battery with local microSD/USB SSD buffering, sustaining full autonomous field operation under primary channel loss.

LIZARD

INNOVATIVE MOBILE PLATFORM



The design provides for high cross-country ability and modularity, which allows it to be adapted for various usage scenarios: from cargo transportation to the integration of combat systems.

Key features:

- Compact tracked/wheeled vehicle with high maneuverability
- Possibility of equipping with various modules: reconnaissance, combat damage, engineering tasks
- Integration of modern sensor and navigation systems
- Full autonomy or remote control

