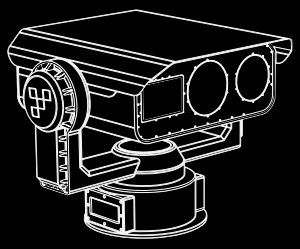
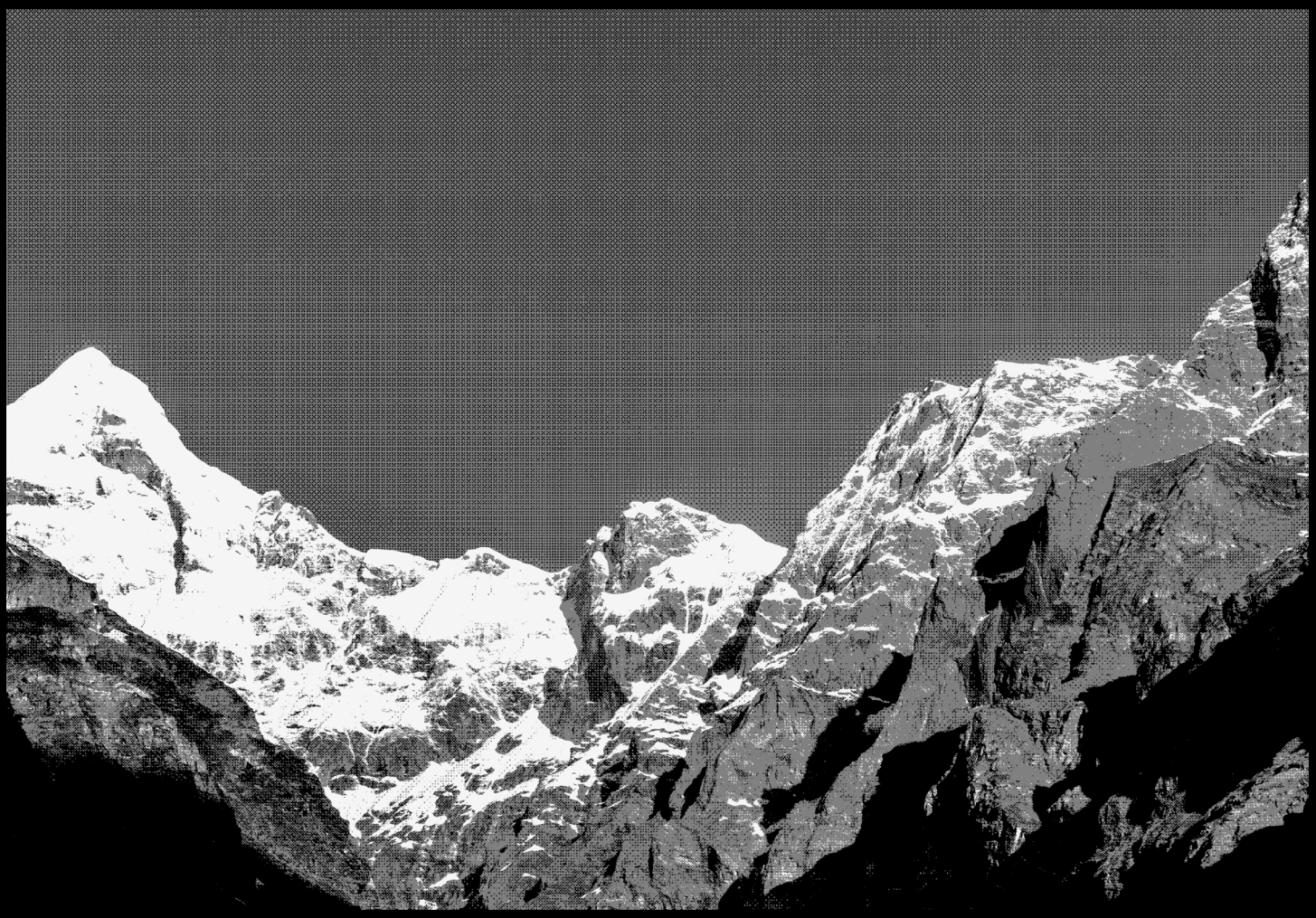
FieldX BEYOND THE HORIZON



AI-Enabled Electro-Optical Surveillance Systems
Cooled & Uncooled Infrared PTZ Camera Family

PRODUCT LINE

FX-GROUND



JUNE 2026

www.fieldx.ai

FX-GROUND
PRODUCT LINE

UNCOOLED

FX-WATCH

FX-SENTINEL

COOLED

FX-HAWK

FX-HAWK M

FX-HAWK L

PRODUCT LINE PHILOSOPHY

The FX-Ground product family is a unified line of AI-enabled electro-optical surveillance systems designed for defence, critical infrastructure, law enforcement, and industrial applications worldwide.

Every variant is built on a vertically integrated platform: custom carrier board for NVIDIA Jetson Orin SOM, in-house software and AI models, integrated MANET/RF wireless communication modules — ensuring full control over the technology stack.

Advanced capabilities across the product line include:

+ Real-time object detection and tracking
+ AI-driven threat classification and alerting
+ Thermal and CMOS sensor fusion
+ Multi-target analysis and tracking
+ Autonomous situational awareness
+ On-device foreign-language translation
+ IP66 rated ruggedization

contact@fieldx.ai

DESIGN PRINCIPLES

Vertically integrated

All FX-Ground variants include a custom carrier board, with all software included (control server, operator UI, ONVIF stack, AI models) and integrated MANET/RF wireless communication modules. This ensures there is no dependency on third-party software or comms stacks.

AI-native by default

Every FX-Ground product ships with the Jetson Orin compute module and a proprietary AI stack. AI-powered detection, classification, tracking, and fusion are standard.

Fiber-optic video backbone

All variants output video and control data over fiber optic (SFP/SFP+) interfaces on the carrier board, enabling long-distance, EMI-immune, tap-resistant connectivity between camera and command post.

Tactical communications

The cooled FX-Hawk variants feature cutting edge MANET/RF wireless modules that provide mesh-networked, software-defined radio communication for field deployments. Multiple camera nodes can form self-healing mesh networks for distributed surveillance.

Passive radar integration

The cooled FX-Hawk variants are designed for integration with passive radar networks, enabling sensor-fused counter-drone and maritime surveillance operations.

Man-portable by design

The mechanical design of all FX-Ground variants is broken into modular, man-portable components. Individual modules can be carried and assembled by a small team in the field without heavy equipment or vehicles.

contact@fieldx.ai

FX-GROUND
Product Line Overview

	UNCOOLED VOX		COOLED MWIR, InSb/MCT		
PARAMETER	FX-Watch	FX-Sentinel	FX-Hawk	FX-Hawk M	FX-Hawk L
TIER	Standard	Professional	Flagship	Flagship (Naval)	Flagship (Naval)
RESOLUTION (DAY)	1920 x 1280	1920 x 1280	1920 x 1280	1920 x 1280	1920 x 1280
RESOLUTION (THERMAL)	640 x 512	640 x 512	640 x 512	640 x 512	1280 x 1024
ZOOM (DAY)	30x	30x	55x	72x	108x
THERMAL LENS	25-100mm	250mm	660mm	660mm	1200mm
COOLING	None	None	Stirling (~77K)	Stirling (~77K)	Stirling (~77K)
NETD	< 35 mK	< 35 mK	< 20 mK	< 15 mK	< 15 mK
DETECTION (VEHICLE)	4–7 km	12–17 km	20–25 km	25–35 km	35–55 km
RECOGNITION (PERSON)	1–2 km	2–3 km	5–7 km	7–9 km	9–11 km
IDENTIFICATION (PERSON)	0.5–1 km	1–1.5 km	2–3 km	3–5 km	5–7 km
DRONE DETECTION	Vision based	Vision based	Vision + Radar	Vision + Radar	Vision + Radar
LRF	No	Std (10km)	Std (10–15 km)	Std (20–25 km)	Std (35 km+)
GYRO STABILISATION	No	No	Optional	Standard (3-axis)	Standard (3-axis)
PTZ	360° pan, -30° to +85° tilt	360° pan, -40° to +85° tilt	360°pan, -40° to +85° tilt	360° pan, -40° to +85° tilt	360° pan, -40° to +85° tilt
VIDEO OUTPUT	Fiber (SFP), GigE	Fiber (SFP+), GigE	Fiber (SFP+), GigE	Fiber (SFP+), GigE	Fiber (SFP+), GigE
RF COMMS	MANET/RF (opt)	MANET/RF (opt)	MANET/RF (std)	MANET/RF (std)	MANET/RF (std)
MAN-PORTABLE	Single carry	Modular	Modular	Deck-mount	Deck-mount
ENVIRONMENTAL	IP66	IP66	MIL-STD-810H IP66	MIL-STD-810H IP66, salt-fog	MIL-STD-810H IP66, salt-fog
WEIGHT	< 7 kg	< 18 kg	< 20 kg	< 35 kg	< 35 kg
PRIMARY MARKET	Smart city, industrial	Critical infra, paramilitary	Military, border, C-UAS	Naval, coastal	Naval, long-range

contact@fieldx.ai

FX-GROUND
PRODUCT LINE

Uncooled Variants

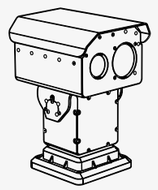
The uncooled variants use vanadium oxide (VOx) microbolometer detectors operating in the 8–14 µm LWIR band.

They require no cryogenic cooling, providing instant-on capability, zero cooler maintenance, and lower unit cost.

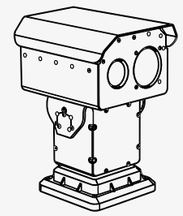
These products are designed for critical infrastructure, smart city, industrial, and paramilitary applications where medium-range detection performance meets operational requirements.

UNCOOLED

FX-WATCH



FX-SENTINEL



contact@fieldx.ai

FX-Watch
Uncooled Compact / Urban

DRI: Human Detection 3–5 km
Recognition 1–2 km
Identification 0.5–1 km
Vehicle Detection 4–7 km

The FX-Watch is the entry point and first deployed product of the FX-Ground line — a compact, lightweight, uncooled thermal PTZ designed for urban perimeter security, smart city surveillance, and industrial site monitoring. At under 7 kg, it is designed as a single-carry unit that one person can transport and install without tools or vehicle support.

TARGET SEGMENTS

Smart city projects, highway/toll monitoring, police and law enforcement, industrial sites (oil & gas, mining, solar farms), warehouse and logistics complexes, residential gated communities.

DETECTOR	Uncooled VOx microbolometer, 8–14 µm LWIR
RESOLUTION (DAY)	1920 x 1280
RESOLUTION (THERMAL)	640 x 512
ZOOM (DAY)	30x
THERMAL LENS	25-100mm
PIXEL PITCH	12–17 µm
NETD	< 35 mK typical
LASER RANGE FINDER	Not available
DRONE DETECTION	Vision Based
PTZ	360° pan, -30° to +85° tilt
EDGE COMPUTE	NVIDIA Jetson Orin NX or Orin Nano
CARRIER BOARD	Custom design, multi-rail power, SFP cage, sensor I/O
AI STACK	Proprietary: detection, classification, auto-tracking, image fusion
SOFTWARE	Proprietary: control server, operator UI, ONVIF, RTSP streaming
VIDEO OUTPUT	Fiber optic (SFP), Ethernet (GigE), H.264/H.265
RF COMMUNICATIONS	MANET/SDR module (optional)
POWER	24V DC or PoE+, < 35W typical
ENVIRONMENTAL	IP66, -20°C to +60°C
MODULARITY	Single-carry unit; one-person deploy
WEIGHT	< 7 kg

contact@fieldx.ai

FX-Sentinel
Uncooled Medium-Range Workhorse

DRI: Human Detection 6–8 km
Recognition 2–3 km
Identification 1–1.5 km
Vehicle Detection 12–17 km

The FX-Sentinel is the volume product of the FX Ground line — an uncooled VOx thermal PTZ system delivering reliable medium-to-long-range surveillance with full AI capabilities. With vehicle detection at 12–17 km, it significantly outperforms the FX-Watch and bridges the gap to the cooled Hawk variants at a fraction of the cost.

TARGET SEGMENTS

Airports, seaports, power plants, oil refineries, military bases (perimeter), paramilitary, high-security government installations.

DETECTOR	Uncooled VOx microbolometer, 8–14 µm LWIR
RESOLUTION (DAY)	1920 x 1280
RESOLUTION (THERMAL)	640 x 512
ZOOM (DAY)	30x
THERMAL LENS	250mm
PIXEL PITCH	12–17 µm
NETD	< 35 mK typical
LASER RANGE FINDER	Optional, 10 km eye-safe
DRONE DETECTION	Vision based
PTZ	360° continuous pan, -40° to +85° tilt
EDGE COMPUTE	NVIDIA Jetson Orin NX or Orin Nano
CARRIER BOARD	Custom design, multi-rail power, SFP+ cage, sensor I/O
AI STACK	Proprietary: detection, classification, auto-tracking, image fusion
SOFTWARE	Proprietary: control server, operator UI, ONVIF, RTSP streaming
VIDEO OUTPUT	Fiber optic (SFP+), Ethernet (GigE), H.264/H.265
RF COMMUNICATIONS	MANET/SDR module (optional)
POWER	24V DC, < 50W typical
ENVIRONMENTAL	IP66, -30°C to +60°C
MODULARITY	Man-portable modular components; field-assemblable
WEIGHT	< 18 kg total system

contact@fieldx.ai

FX-GROUND
PRODUCT LINE

Cooled Variants

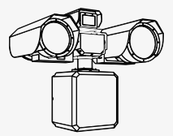
The cooled variants use InSb or HgCdTe (MCT) MWIR detectors operating in the 3–5 µm band with Stirling micro-coolers at ~77K. The MWIR band provides superior contrast for small, hot targets — drone motors, exhaust plumes, jet engines, fast craft — against cold sky or sea backgrounds.

These products are designed for the most demanding military, counter-UAS, and naval applications where extreme detection range and thermal sensitivity are non-negotiable.

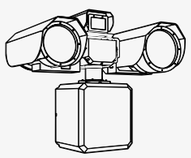
All three cooled variants support integration with passive radar mesh for sensor-fused counter-drone operations.

COOLED

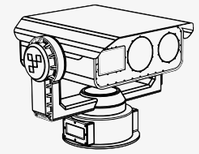
FX-HAWK



FX-HAWK M



FX-HAWK L



contact@fieldx.ai

FX-Hawk
Cooled MWIR Land Flagship

DRI: Human Detection 10–15 km
Recognition 4–6 km
Identification 2–3 km
Vehicle Detection 20–25 km
Drone 3–5 km

The FX-Hawk is the land-optimised cooled MWIR flagship of the FX-Ground line. At under 8 kg, it is the lightest cooled IR PTZ in its class — designed for forward deployment by dismounted infantry, border observation posts, and rapid-reaction counter-UAS teams. The entire system breaks down into man-portable modules for field assembly without vehicle support.

DRONE DETECTION ARCHITECTURE

Standalone mode: AI-powered detection using proprietary models on Jetson Orin NX. Continuous horizon scanning, automatic target detection, classification (fixed-wing, rotary, bird, clutter), and auto-tracking with slew-to-cue.

Passive radar fusion mode: Integrated with passive radar mesh. Receives radar cue data (bearing, range, Doppler) and automatically slews to target for visual confirmation. Complete detect-classify-track-confirm chain without active RF emissions.

TARGET SEGMENTS

Armed Forces (border/LOC surveillance, air defence), paramilitary, counter-UAS deployments, high-value asset protection, forward observation posts.

All cooled variants support integration with passive radar mesh for sensor-fused counter-drone operations.

DETECTOR	Cooled MWIR InSb / HgCdTe (MCT), 3–5 µm
RESOLUTION (DAY)	1920 x 1280
RESOLUTION (THERMAL)	640 x 512
ZOOM (DAY)	55x
THERMAL LENS	660mm
PIXEL PITCH	15 µm
COOLING	Stirling micro-cooler, ~77K
GYRO STABILIZATION	Optional
NETD	< 20 mK typical
LASER RANGE FINDER	Eye-safe Class 1M, 10–15 km
DRONE DETECTION	Vision + Radar: 1–3 km (AI) extended with passive radar fusion
PTZ	360° continuous pan, -40° to +85° tilt, stabilised
EDGE COMPUTE	NVIDIA Jetson Orin NX
CARRIER BOARD	Custom design, multi-rail power, SFP+ cage, sensor I/O
AI STACK	Proprietary detection, classification, auto-tracking, image fusion, drone classification
SOFTWARE	Proprietary: control server, operator UI, ONVIF, RTSP streaming
VIDEO OUTPUT	Fiber optic (SFP+), Ethernet (GigE), H.264/H.265, STANAG 4609
RF COMMUNICATIONS	MANET/SDR module (standard): mesh network, encrypted
PASSIVE RADAR INTEGRATION	Radar cue ingestion, slew-to-cue, fused track management
POWER	24V DC (MIL-spec), < 80W typical
ENVIRONMENTAL	IP66, MIL-STD-810H, -40°C to +55°C
MODULARITY	Man-portable modular components; field-assemblable by small team
WEIGHT	< 20 kg

contact@fieldx.ai

FX-Hawk M
Marinised Naval Variant

DRI: Human Detection 15-20 km
Recognition 6-8 km
Identification 3–5 km
Vehicle Detection 25–35 km
Drone 5–7 km

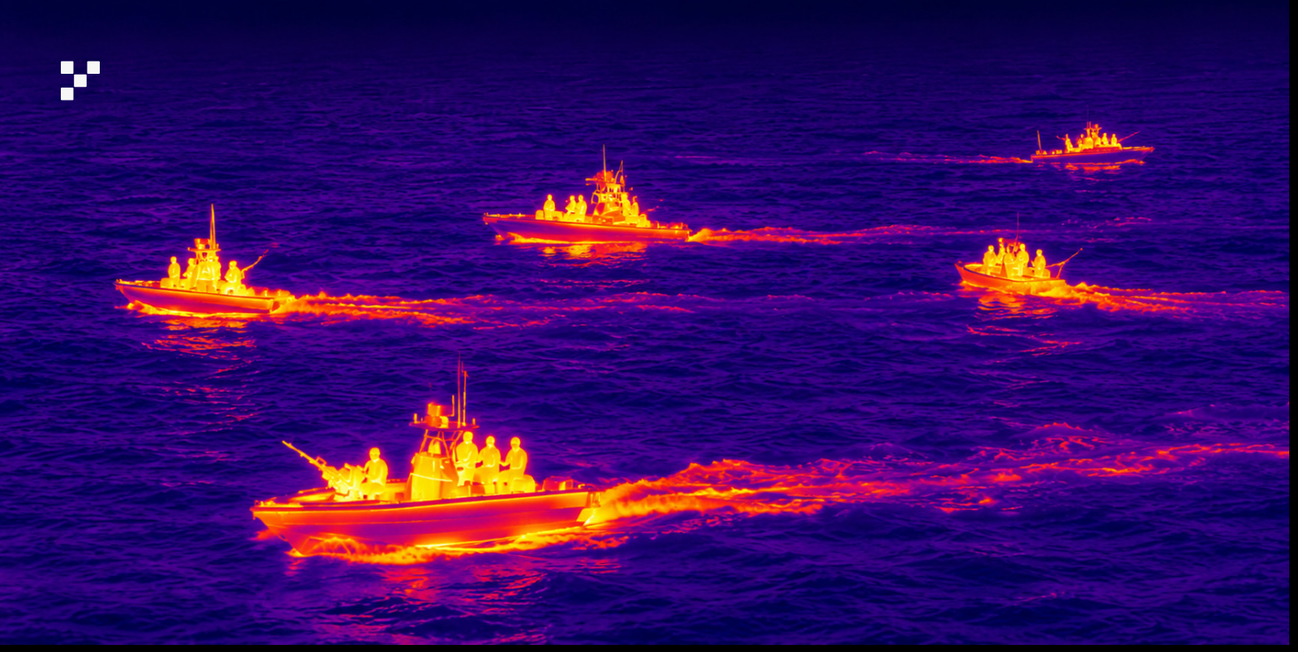
The FX-Hawk M is the naval-grade mid-range flagship — a marinised, gyro-stabilised cooled MWIR system designed for shipboard, coastal, and offshore deployment. It extends the Hawk platform with a 72× day channel, tighter NETD (< 15 mK), standard 3-axis gyro-stabilisation, and a 20–25 km LRF for fire-control integration. Three-axis gyro-stabilisation compensates for platform motion in sea state 3–4.
The passive radar fusion package provides maritime-adapted detect-classify-track-confirm capability — tracking surface vessels, low-altitude drones, and fast inshore attack craft.

TARGET SEGMENTS

Navy and Coast Guard, coastal surveillance, port and harbour security, offshore platforms.

DETECTOR	Cooled MWIR InSb / HgCdTe (MCT), 3–5 µm
RESOLUTION (DAY)	1920 x 1280
RESOLUTION (THERMAL)	640 x 512
ZOOM (DAY)	72x
THERMAL LENS	660mm
PIXEL PITCH	15 µm
COOLING	Stirling micro-cooler, ~77K
GYRO STABILIZATION	Standard, 3-axis (pitch/roll/yaw)
NETD	< 15 mK typical
LASER RANGE FINDER	Eye-safe Class 1M, 20–25 km
DRONE DETECTION	Vision + Radar
PTZ	360° continuous pan, -40° to +85° tilt, stabilised
EDGE COMPUTE	NVIDIA Jetson Orin NX or Orin Nano
CARRIER BOARD	Custom design, multi-rail power, SFP+ cage, sensor I/O
AI STACK	Proprietary detection, classification, auto-tracking, image fusion, drone classification
SOFTWARE	Proprietary: control server, operator UI, ONVIF, RTSP streaming
VIDEO OUTPUT	Fiber optic (SFP+), GigE, H.264/H.265, STANAG 4609
RF COMMUNICATIONS	MANET/SDR (standard): shipboard mesh, shore-link
PASSIVE RADAR INTEGRATION	Maritime-adapted: surface vessel, drone, fast craft tracking
SEA STATE RATING	Effective in sea state 3–4
SALT-FOG PROTECTION	MIL-STD-810H Method 509.7, marine-grade coatings
WIPER / WASHER	Integrated front-window wiper with salt-water wash
HOUSING	Marine-grade aluminium, sacrificial anode system
MOUNTING	NATO STANAG pedestal interface, deck-mount
POWER	24V DC / 110V AC (shipboard), < 120W typical
ENVIRONMENTAL	IP66, MIL-STD-810H, salt-fog, -40°C to +55°C
MODULARITY	Deck-mount; modular sensor head separable for maintenance
WEIGHT	< 35 kg

contact@fieldx.ai



FX-Hawk L
Ultra-Long-Range Naval Variant

DRI: Human Detection 20+ km
Recognition 9–11 km
Identification 5–7 km
Vehicle Detection 35–55 km
Surface Vessel > 40km
Drone 7–10 km

The FX-Hawk L is the top-of-line naval EO/IR system in the FX-Ground family — a high-resolution, ultra-long-range cooled MWIR platform designed for capital ship surveillance, exclusive economic zone (EEZ) monitoring, and fleet-level maritime domain awareness. It pushes detection range beyond 35 km for vehicles and 5–7 km for person identification, with a 35 km+ LRF for fire-control-grade ranging.

The FX-Hawk L uses a 1280×1024 cooled MWIR detector (the highest resolution in the product line) paired with a 1200mm lens — delivering optical performance competitive with the best naval EO/IR systems available globally.

TARGET SEGMENTS

Capital ships (destroyers, frigates), EEZ patrol vessels, coastal surveillance command centres, strategic naval installations, allied naval exports.

DETECTOR	Cooled MWIR InSb / HgCdTe (MCT), 3–5 µm
RESOLUTION (DAY)	1920 x 1280
RESOLUTION (THERMAL)	1280 x 1024
ZOOM (DAY)	108x
THERMAL LENS	1200mm
PIXEL PITCH	15 µm
COOLING	Stirling micro-cooler, ~77K
GYRO STABILIZATION	Standard, 3-axis (pitch/roll/yaw)
NETD	< 15 mK typical
LASER RANGE FINDER	Eye-safe Class 1M, 35 km+ range
DRONE DETECTION	Vision + Radar
PTZ	360° continuous pan, -40° to +85° tilt, stabilised
EDGE COMPUTE	NVIDIA Jetson Orin NX or Orin Nano
CARRIER BOARD	Custom design, multi-rail power, SFP+ cage, sensor I/O
AI STACK	Proprietary detection, classification, auto-tracking, image fusion, drone classification
SOFTWARE	Proprietary: control server, operator UI, ONVIF, RTSP streaming
VIDEO OUTPUT	Fiber optic (SFP+), GigE, H.264/H.265, STANAG 4609
RF COMMUNICATIONS	MANET/SDR (standard): shipboard mesh, shore-link
PASSIVE RADAR INTEGRATION	Maritime-adapted: surface vessel, drone, fast craft tracking
SEA STATE RATING	Effective in sea state 3–4
SALT-FOG PROTECTION	MIL-STD-810H Method 509.7, marine-grade coatings
WIPER / WASHER	Integrated front-window wiper with salt-water wash
HOUSING	Marine-grade aluminium, sacrificial anode system
MOUNTING	NATO STANAG pedestal interface, deck-mount
POWER	24V DC / 110V AC (shipboard), < 120W typical
ENVIRONMENTAL	IP66, MIL-STD-810H, salt-fog, -40°C to +55°C
MODULARITY	Deck-mount; modular sensor head separable for maintenance
WEIGHT	< 35 kg

contact@fieldx.ai

ABOUT FIELDX

As the age of autonomy reshapes defence, FieldX is focused on developing autonomous defence technologies.

FieldX is a **robotics lab** developing intelligent systems that transform existing sensors into coordinated autonomous platforms.

Our AI multiplies the intelligence of existing sensor systems across **airspace security, ground surveillance,** and **soldier systems.** Every layer of our platform, from custom carrier boards to neural networks, is designed in-house.

Our goal is to transform fragmented sensor networks into **a high-speed coordinated platform** for global defence environments.

ABOUT OUR FOUNDER

Kaustuv De Biswas
Founder and CEO, FieldX.

Kaustuv De Biswas has spent two decades building at the intersection of artificial intelligence, robotics, and computational design — across research, enterprise software, and now defense. The throughline has always been the same: embedding intelligence into things, and shipping it into the real world. He founded FieldX to invent the hard technology most players import, and to put it where it matters most — defense, critical infrastructure, and industry.

An **MIT-trained engineer** and **TED Senior Fellow**, Kaustuv previously built and sold a Silicon Valley venture, VibrantData, to Rakuten in 2016. He pairs frontier research depth with a builder's bias for shipping — and still keeps a bench, because at FieldX the founder builds.

contact@fieldx.ai

FieldX BEYOND THE HORIZON

contact@fieldx.ai

www.fieldx.ai