NOTOXYTECH

FIXED-WING VTOL UAS
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QUADPLANE VTOL · LONG-ENDURANCE ISR

Pinak-X
VTOL ISR

A 2-metre quadplane that takes off and lands like a multirotor and cruises like an aircraft — equipped with the tri-sensor gimbal and smart ground controller for long-endurance day-and-night surveillance.



2.0 m	2 hrs	30 km	640 ×512
WINGSPAN	ENDURANCE*	CONTROL LINK	THERMAL

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OVERVIEW

Why the Pinak-X VTOL ISR System?

The Pinak-X ISR System pairs the proven quadplane airframe with a fully integrated sensor and control chain, configured and supported by Notoxytech Technologies Pvt Ltd.

Four lift motors give it multirotor-style vertical take-off and landing from confined or rough sites, while its 2-metre wing carries it efficiently in forward flight for hours — far beyond the endurance of a multirotor. The tri-sensor gimbal delivers visible, thermal and laser-ranging data, streamed live to the 7-inch smart controller over a 30 km digital link.





CORE CAPABILITIES

Built for the mission

Vertical Take-off & Landing
No runway, launcher or net needed

Efficient Fixed-Wing Cruise
High-efficiency wing for long-range missions

2 Hours Endurance
120 minutes, with 20% reserve for VTOL landing

Day & Night ISR
2K visible + 640×512 thermal imaging

Laser Rangefinding
5 m – 1 km, ±1 m precision

30 km Video & Control Link
Dual-band 2.4 / 5.8 GHz

Field-Portable
Wings, booms and A-tail fully removable

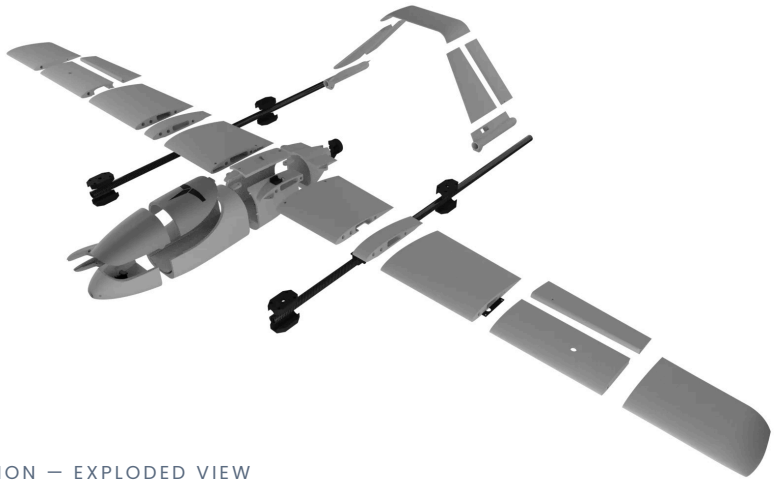
AI Target Lock & Tracking
Surveillance payload with a live handheld pilot interface

AIRFRAME	PAYLOAD	GROUND CONTROL
2 m quadplane VTOL with A-tail	Visible · thermal · laser rangefinder	7" Android controller, 30 km link

THE PLATFORM

The Pinak-X Airframe

Designed to make take-offs and landings easy in challenging environments, the Pinak-X combines a light, rigid modular structure with high aerodynamic efficiency for long-range missions.



MODULAR CONSTRUCTION — EXPLODED VIEW

Configuration

- Quadplane VTOL: 4 lift motors + forward-flight motor
- A-tail for proverse roll in yaw and strong pitch authority
- 2,021 mm wingspan

Construction

- Lightweight yet structurally rigid airframe
- Carbon-fibre booms carry the lift motors
- Concealed, serviceable servos

Portability

- Wings, booms and A-tail fully removable
- Compact for vehicle transport
- Quick field assembly

Aerodynamics

- Near-zero-gap control surfaces
- Rounded leading edges sunk into wings and stabs
- Cruise speed 45 – 65 km/h

Power & Endurance

- 10,000 mAh Li-ion battery
- Endurance: 2 hrs (120 min)

RF Integration

- Large wing bays for receiver and video TX
- Maximum antenna separation
- Room for receiver and Camera payload

TECHNICAL DATA

System Specifications

2.0 m	6 kg	45–65 km/h	2 hrs	30 km
WINGSPAN	MAX TAKE-OFF	CRUISE	MAX ENDURANCE*	LINK RANGE

AIRFRAME	
Airframe	Pinak-X VTOL
Configuration	Quadplane VTOL (4 lift motors + forward-flight motor), A-tail
Wingspan	2,021 mm
Max take-off weight	6 kg (recommended maximum)
Max VTOL propeller	12inch
Construction	Lightweight rigid airframe, carbon-fibre booms; wings, booms and A-tail removable
PERFORMANCE	
Cruise speed	45 – 65 km/h
Endurance	**2 hours (120 minutes)** on 10,000 mAh Li-ion, with 20% charge kept for VTOL landing
Operational range	**Up to 30 km** live video and control (radio link, ground-to-air, line of sight)
Take-off / landing	Vertical (VTOL) — no runway or launcher required
MISSION SYSTEM	
Camera payload	Tri-sensor 3-axis gimbal — 5 MP visible (30× digital zoom), 640 × 512 thermal, 905 nm laser rangefinder (5 m – 1 km)
Ground controller	7" 1920 × 1080 touch screen, Android 13, 16 channels
Air-side receiver	2.4 / 5.8 GHz, SBUS + PWM + data + Ethernet
Datalink	Dual-band 2.4 / 5.8 GHz digital, automatic frequency hopping
Video	H.265 live stream to the ground controller; 2K on-board recording
Configuration	Flight controller, flight modes and failsafes configured to user specification

** Performance figures are indicative. Actual endurance and range depend on payload, battery, wind, temperature and mission profile. Operational range is limited by the radio link and line of sight. Specifications are subject to change and configurable to user requirements.*

CAMERA PAYLOAD

Tri-Sensor Gimbal

A compact three-light gimbal integrating a 5 MP 2K visible camera, a 640 × 512 thermal imager and a 905 nm laser rangefinder on an industrial-grade 3-axis stabilised mount. Its 7.2 – 72 V input and Ethernet output connect directly to the air-side receiver for live video on the ground controller.



KEY FEATURES

- Three-light payload: visible + thermal + laser rangefinder
- 2K (2880 × 1620) recording, 5 MP distortion-free lens
- 640 × 512 thermal, white-hot / black-hot + 12 palettes
- 905 nm laser rangefinder: 5 m – 1 km, ±1 m
- AI guidance with a compatible flight controller
- Industrial-grade 3-axis stabilisation
- 30× digital / electronic zoom
- Heat-source detection up to 1.1 km
- AI target locking & tracking
- Ethernet / RTSP network output, H.265 streaming

GIMBAL – PHYSICAL & GENERAL

Gimbal type	3-axis stabilised (pitch, yaw, roll)
Dimensions	59 × 61 × 92 mm
Weight	176 g
Operating voltage	7.2 V – 72 V
Operating current	334 mA @ 12 V
Operating temperature	-10 °C to +50 °C
Interface	Ethernet / LAN (RTSP output)

VISIBLE-LIGHT CAMERA

Resolution	5 MP, 1/2.7" CMOS
Video recording	2880 × 1620 @ 30 fps (H.265, 8 Mbps)
Real-time stream	1280 × 720 (H.265, 2 Mbps)
Zoom	30× digital / electronic
Focal length / aperture	3.5 mm / F2.2
Field of view	83.4°

THERMAL IMAGING SENSOR

Resolution	640 × 512
Response band	8 – 14 µm
Focal length / aperture	9.1 mm / F1.0
Field of view	48.7° × 38.6°
Palettes	White-hot / black-hot + 12 pseudo-colours
Detection distance	Up to 1.1 km

LASER RANGEFINDER (LRF)

Wavelength	905 nm
Measurement range	5 m – 1,000 m
Precision	±1 m
Measurement frequency	1 – 5 Hz

GROUND CONTROL

Smart Controller

An all-in-one ground station with a built-in 7-inch display, Android computer and long-range digital link. It flies the aircraft, steers the camera gimbal and shows live HD video and telemetry, with no separate laptop needed.

7"
1920 × 1080 high-brightness touch screen

6 nm
Qualcomm 8-core · Android 13 (64-bit)

30 km
Video & control range (ground-to-air, LOS)

6–8 h
20,000 mAh battery · 3–4 h full charge

AIRCRAFT
Tri-Sensor Gimbal
Ethernet / RTSP video

›

AIR-SIDE
Air Receiver
SBUS · PWM · telemetry

›

GROUND
Smart Controller
Live video, GCS & control

CONTROLLER FEATURES

- Dual-band 2.4 / 5.8 GHz with automatic frequency hopping
- Runs mainstream ground-station apps
- Built-in dual cooling fans for continuous operation
- Rugged, dust-protected shell and interfaces
- Gimbal-pitch wheel, photo button and 3-position mode switch
- Hardware decoding of H.264 / H.265 and 4K video
- SIM-card slot for 4G network connectivity
- Video sharing via Wi-Fi hotspot or Ethernet
- SDK available for custom integration

REMOTE CONTROLLER

Display	7" industrial touch screen, 1920 × 1080
Processor	Qualcomm 6 nm, 8-core
Operating system	Android 13 (64-bit)
Memory / storage	8 GB RAM / 128 GB
Frequency band	2.4 GHz / 5.8 GHz
Channels	16
Frequency hopping	Automatic
RF power	< 23 dBm (CE / FCC)
Control distance	5 – 30 km (ground-to-air, visual)
Battery / endurance	20,000 mAh / 6 – 8 hours
Charging	Type-C, approx. 3 – 4 hours
Interfaces	USB, SIM-card slot, Type-C
Size / weight	277 × 138 × 96 mm / 1.2 kg
Operating temperature	-10 °C to +55 °C

RECEIVER (AIR UNIT)

Frequency band	2.4 GHz / 5.8 GHz
Supply voltage	7.2 – 72 V (XT30)
Operating current	12 V / 300 mA
Air data rate	200 Kbps – 160 Mbps
Channel bandwidth	1.25 / 2.5 / 5 / 10 / 20 / 40 MHz
Serial baud rate	57600 / 115200 / 921600
Interfaces	1 × data, 1 × Ethernet, 1 × SBUS, 3 × PWM
RF power	< 23 dBm (CE / FCC)
Dimensions	45.5 × 60 × 21.5 mm
Weight	37 g
Operating temperature	-10 °C to +60 °C

GALLERY

Pinak-X VTOL in Detail


Field-ready — quadplane VTOL with four lift motors and A-tail


Forward flight — lift motors idle, wing carries the load


Top view — 2,021 mm wingspan


Front view — slim fuselage and A-tail


Carbon booms with 4 VTOL lift motors

NOTOXYTECH

Ready when the mission is.

Talk to our team about demonstrations, configurations and field trials of the Pinak-X VTOL ISR System.

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