SKYLARK

AI VisionCube Kit

2026 Brand New Upgrade
Next-Level Sensing AI Module

Clearer | More Accurate | More Intelligent

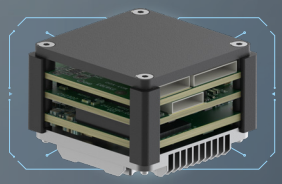
- Upgrade to 640*512 Thermal Imaging Resolution
- 1.2km Ultra-Range
- PiP Architecture
- Multi-Target ID
- Auto-Adhesive Tracking + Dynamic Memory Lock





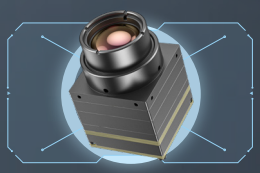
The AI VisionCube Kit is a revolutionary AI visual tracking system designed specifically for drones, integrating high-performance target recognition, dynamic tracking, and anti-jamming control. Through the fusion of deep learning algorithms and high-performance intelligent chips, drones equipped with this kit can achieve automatic target acquisition, stable tracking, and precise trackings in complex electromagnetic environments. This significantly reduces the operational threshold for pilots and greatly improves mission execution efficiency.

AI Image Processing Board



Tthe central control unit of the system, it acts like the "brain" of the system. It processes the image data captured by the high-definition camera in real-time, utilizing advanced AI algorithms for target detection and recognition. The system also features an automatic adhesive tracking function, where it can automatically attach and track a target, precisely locking onto the target's features. Additionally, it has memory tracking functionality, recording the target's movement characteristics and historical trajectory to provide more accurate data support for subsequent tracking.

640*512 Thermal Imaging Camera



With 640*512 high resolution for clear & stable imaging; high frame rate design ensures smooth detection of fast-moving targets; wide temperature range with high precision; possesses seamless night operation & camouflaged target recognition capabilities, suitable for multi-scenario operations.

HD Visible Light Camera



Ultra-low latency analog output for real-time clear image transmission. Built-in picture-in-picture mode supports electronic zoom, allowing pilots to simultaneously observe the overall environment & target details. With optimized algorithms, the image transmission maintains low latency throughout, aiding real-time control decisions.

1.2km Ultra-Long-Range Recognition

Equipped with single/dual-camera collaborative algorithms and precision optical modules, automatically identifies human/vehicle targets at 1.2km range. Achieves 85% higher recognition accuracy than conventional AI systems, enabling beyond-visual-range operations in complex environments.

Multi-Target Recognition

YOLOv7-optimized architecture simultaneously tracks 50+ dynamic targets within FOV. Supports self-training algorithm deployment for customized classification models in defense and surveillance scenarios.

PiP Architecture

Dual-stream PiP technology combines global situational awareness (main view) with 8x digital zoom tracking (sub-view), allowing real-time environmental analysis and precision strike decision-making.

Adaptive Lock-On Tracking

After identifying multiple targets, the drone can correct its heading. The intelligent crosshair adsorption algorithm will adsorb the tracked target to the central area of the screen, reducing the locking time to 0.5 seconds. This significantly reduces the micro-operation load on the pilot and increases the locking success rate to 92% in high-speed moving scenarios.

Dynamic Memory Locking

Integrates temporal prediction models and Kalman filter algorithms to reacquire targets within 3s after occlusion/visual loss. Enhances tracking stability by 40% in dense foliage environments.

Multi-sensor Compatibility

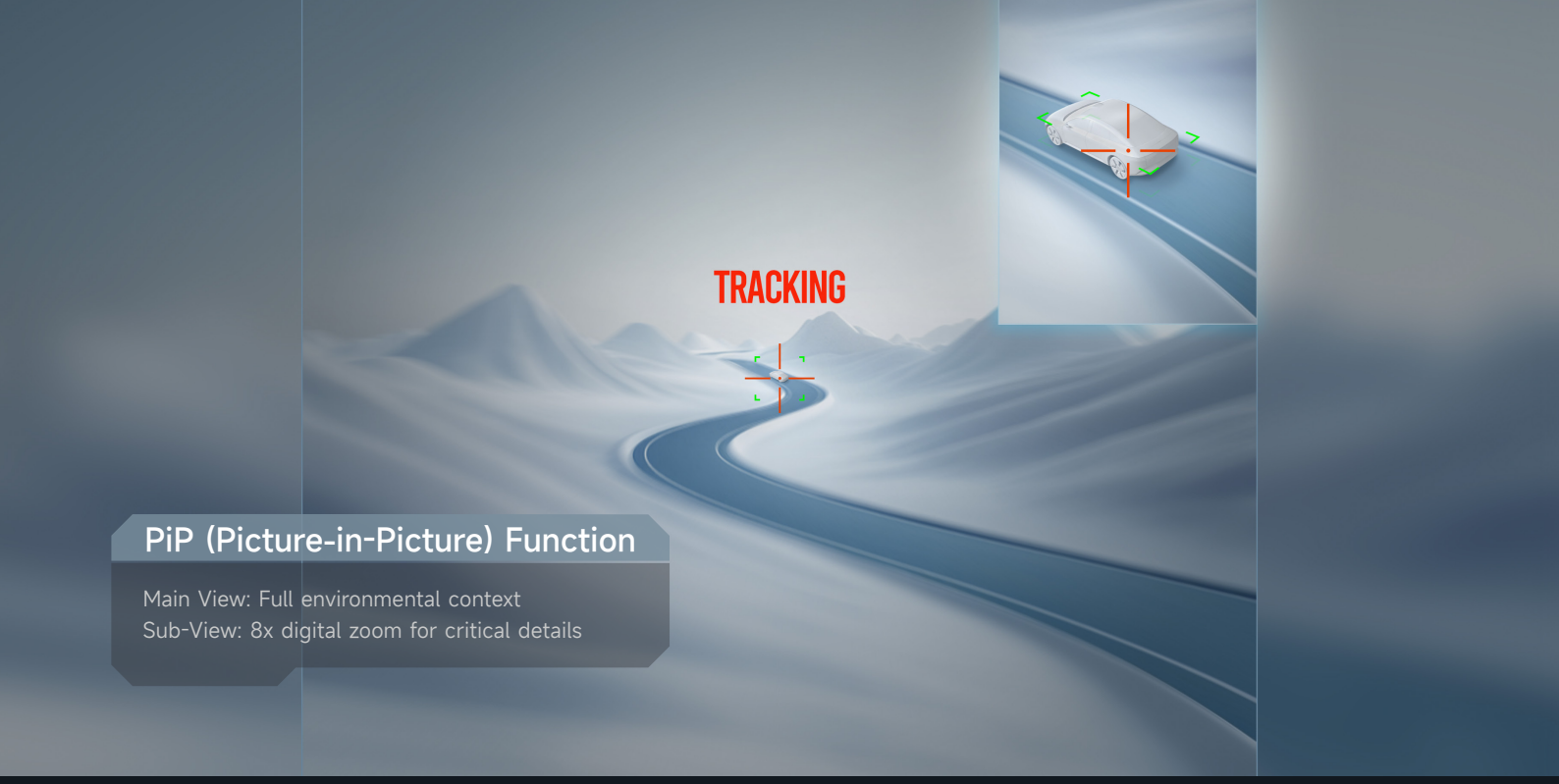
Switchable visible/thermal sensors with 9650 mV/lux·s ultra-high sensitivity and uncooled thermal imaging. Ensures 24/7 target ID capability from -20°C to 60°C, defeating camouflage/thermal masking.

Target Re-locking Support

After locking a target, if you wish to change the target, you can toggle the corresponding channel's RC stick. An additional aiming crosshair will appear in the VTX image. Use the RC direction stick to move the aiming crosshair to the new target, and then lock it again.

Snap-Lock Function

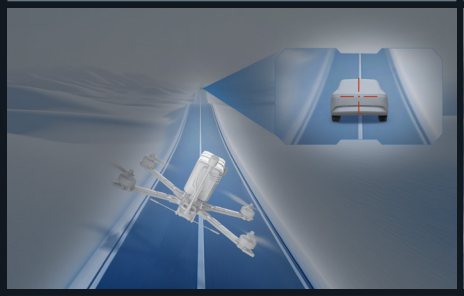
This is a target control function that is enabled by default, assisting the pilot in quickly locking onto targets during flight.For scenarios where target attraction interference is undesirable, this function can be disabled. Precise locking can then be achieved in conjunction with the tracking fine-tuning function according to actual conditions.



PiP (Picture-in-Picture) Function

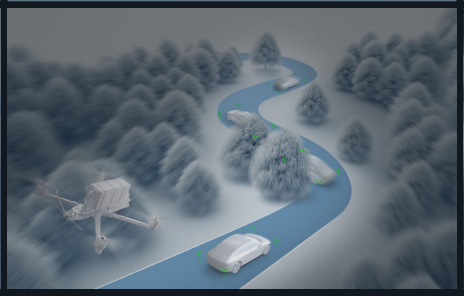
Main View: Full environmental context
Sub-View: 8x digital zoom for critical details

Max 1.2km Recognition Range, Max 50 Dynamic Targets



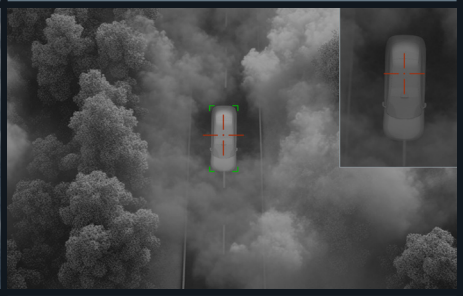
Up to 50 targets within its FOV. D/DT/DT Pro: max 1.2km recognition range.

Dynamic Memory Lock



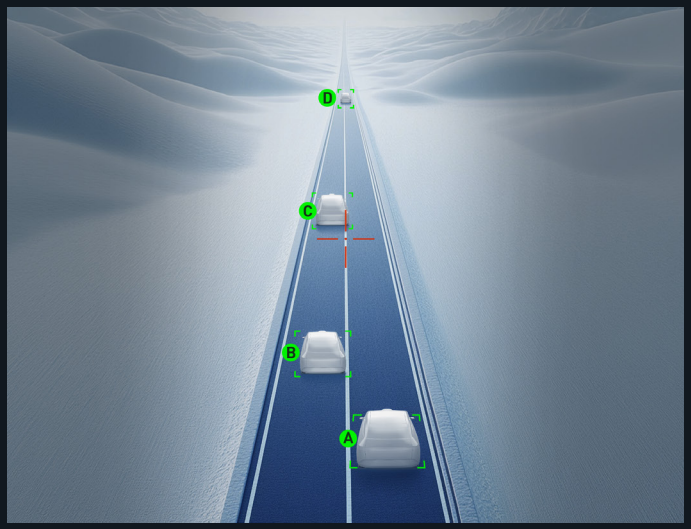
If a moving target is temporarily occluded, the system can re-acquire & continue tracking it within 3s using motion trajectory memory.

Multi-Spectral Display for Day & Night Operation



Support thermal imaging integration, enabling day&night operation & detection of camouflaged targets.

Smart Crosshair Auto-Snap for Simplified Operation



1. Simultaneously identifies multiple targets in FOV & adjusts the heading angle to align the crosshair with the tracking target.



2. The smart crosshair auto-snap algorithm auto-centers the tracking target in the frame & maintains continuous tracking.



	AI VisionCube S	AI VisionCube D	AI VisionCube ST	AI VisionCube DT	AI VisionCube ST Pro	AI VisionCube DT Pro
Camera	Visible Light (Short Focus)	Dual Visible Light (Short Focus + Long Focus)	Visible Light (Short Focus) + 384 Thermal Imaging	Dual Visible Light (Short Focus + Long Focus) + 384 Thermal Imaging	Visible Light (Short Focus) + 640 Thermal Imaging	Dual Visible Light (Short Focus + Long Focus) + 640 Thermal Imaging
Spatial Recognition	Air-to-Ground Recognition	Air-to-Ground Recognition	Air-to-Ground Recognition	Air-to-Ground Recognition	Air-to-Ground Recognition	Air-to-Ground Recognition
Target Recognition Types	Default: Human, Vehicle	Default: Human, Vehicle	Default: Human, Vehicle	Default: Human, Vehicle	Default: Human, Vehicle	Default: Human, Vehicle
Target Detection Range	Vehicle: 450m, Human: 170m	Vehicle: 1200m, Human: 500m	Vehicle: 450m, Human: 170m	Vehicle: 1200m, Human: 500m	Vehicle: 450m, Human: 170m	Vehicle: 1200m, Human: 500m
Min Target Tracking Pixel	16x16 pixels	16x16 pixels	16x16 pixels	16x16 pixels	16x16 pixels	16x16 pixels
Average Tracking Speed of Dynamic Target	80km/h	80km/h	80km/h	80km/h	80km/h	80km/h
Intelligent Adhesive Tracking	Supports crosshair fuzzy locking for close-range adhesive tracking	Supports crosshair fuzzy locking for close-range adhesive tracking	Supports crosshair fuzzy locking for close-range adhesive tracking	Supports crosshair fuzzy locking for close-range adhesive tracking	Supports crosshair fuzzy locking for close-range adhesive tracking	Supports crosshair fuzzy locking for close-range adhesive tracking
Trajectory Prediction & Memory Tracking	Supports trajectory prediction and feature memory tracking	Supports trajectory prediction and feature memory tracking	Supports trajectory prediction and feature memory tracking	Supports trajectory prediction and feature memory tracking	Supports trajectory prediction and feature memory tracking	Supports trajectory prediction and feature memory tracking
Max Target Recognition No.	50	50	50	50	50	50
Picture-in-Picture (PiP)	Supported	Supported	Supported	Supported	Supported	Supported
Supported VTX	Analog	Analog	Analog	Analog	Analog	Analog
Supported Optical Fiber Type	Analog	Analog	Analog	Analog	Analog	Analog
Recommended FPV Size	7 inches or larger	7 inches or larger	7 inches or larger	7 inches or larger	7 inches or larger	7 inches or larger
AI Image Processing Board						
Computing Power	1 TOPS	6 TOPS	1 TOPS	6 TOPS	1 TOPS	6 TOPS
Communication Protocol	CRSF	CRSF	CRSF	CRSF	CRSF	CRSF
Supported Firmware	BetaFlight	BetaFlight	BetaFlight	BetaFlight	BetaFlight	BetaFlight
Input Voltage	9~16V	9~16V	9~16V	9~16V	9~16V	9~16V
Mounting Holes	25.5*25.5mm	25.5*25.5mm	25.5*25.5mm	25.5*25.5mm	25.5*25.5mm	25.5*25.5mm
Size	38*38*29mm	38*38*29mm	38*38*29mm	38*38*29mm	38*38*29mm	38*38*29mm
Weight	43.8g	43.8g	43.8g	43.8g	43.8g	43.8g
Visible Light - Short Focus						
CMOS	1/2.8inch	1/2.6inch	1/2.8inch	1/2.6inch	1/2.8inch	1/2.6inch
Focal Length	4mm	3.9mm	4mm	3.9mm	4mm	3.9mm
FOV	69° (H)*42° (V)	72° (H)*45° (V)	69° (H)*42° (V)	72° (H)*45° (V)	69° (H)*42° (V)	72° (H)*45° (V)
Min. Illumination	7341mV/lux ·s	9650mV/lux ·s	7341mV/lux ·s	9650mV/lux ·S	7341mV/lux ·s	9650mV/lux ·S
Output Resolution	1920*1080@30Hz	1920*1080@30Hz	1920*1080@30Hz	1920*1080@30Hz	1920*1080@30Hz	1920*1080@30Hz
Camera Size	19*19*30mm	40.8*25*26mm	19*19*30mm	40.8*25*26mm	19*19*30mm	40.8*25*26mm
Visible Light - Long Focus						
CMOS	/	1/2.6inch	/	1/2.6 inch	/	1/2.6 inch
Focal Length	/	12mm	/	12mm	/	12mm
FOV	/	26° (H)*15° (V)	/	26° (H)*15° (V)	/	26° (H)*15° (V)
Min. Illumination	/	9650mV/lux ·s	/	9650mV/lux ·s	/	9650mV/lux ·s
Output Resolution	/	1920*1080@30Hz	/	1920*1080@30Hz	/	1920*1080@30Hz
Camera Size	/	40.8*25*26mm	/	40.8*25*26 mm	/	40.8*25*26 mm
Thermal Camera						
Video Output Resolution	/	/	384*288@25Hz	384*288@25Hz	640*512@50Hz	640*512@50Hz
Pixel Pitch	/	/	12μm	12μm	12μm	12μm
Focal length	/	/	9.1mm	9.1mm	9.1mm	9.1mm
FOV	/	/	20.3°(H)*15.2°(V)	20.3°(H)*15.2°(V)	45.9°(H)x36.9(V)	45.9°(H)x36.9(V)
Spectral Response Range	/	/	8~14μm(LWIR)	8~14μm(LWIR)	8~14μm(LWIR)	8~14μm(LWIR)
Camera Size	/	/	26*26*32.85mm	26*26*32.85mm	26*26*21.1mm (excl. lens & connector)	26*26*21.1mm (excl. lens & connector)
Weight	/	/	32.4g	32.4g	≤23g(excl. lens & connector)	≤23g(excl. lens & connector)
Interface	/	/	USB	USB	USB	USB