

## Golden Award Robotic & Drones

Drone image processing and AI  
object detection and tracking



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### Winning Reason

This pioneering MIT (Made in Taiwan) solution integrates drone image processing chip with AI object detection and tracking, providing a domestic strategic platform for kamikaze, fiber-optic, and counter-drone applications. Featuring a built-in dynamic calibration lens paired with a self-developed ISP and domestic sensors, it excels in low-visibility environments such as heavy fog or smoke. Powered by an onboard 2TOPS AI SoC, the module delivers low-latency, ultra-low-power performance. The self-developed lightweight AI algorithms combine optical flow, ByteTrack, and Re-ID to achieve millisecond-level target locking with superior occlusion resistance. Furthermore, the system leverages a proprietary generative AI dataset for different aerial scenarios and utilizes a Visual Odometry-IMU fusion to ensure reliable autonomous Return-to-Home (RTH) in GPS-denied environments.

### Product Feature

The AI object detection and dynamic tracking feature includes:

- Multi-target recognition: Accurately identifying vehicles, people, and even other targets in complex backgrounds.
- Dynamic tracking compensation: Utilizing real-time AI algorithms to compensate for drone flight vibrations, ensuring the target remains centered in the image.

With the increasing importance of modern drones, target tracking is becoming more and more widespread. Drones can autonomously fly to their destinations using GPS and IMU, but how to track moving targets without human intervention? AI target locking and tracking can be achieved through gimbal imaging.