

Long-distance dual-spectrum AI PTZ camera



- Dual spectral imaging
- AI Detect& Identify& Track
- Edge computing network SDK
- Lens, PTZ autonomous control

The long-distance dual-spectrum AI PTZ camera is an intelligent device designed for open scenes such as border defense, squares, and docks.

The camera combines infrared thermal imaging, visible light camera and edge computing, and supports dual-band imaging. The target recognition and tracking distance up to kilometers can effectively cover the monitoring area. The AI algorithm based on intelligent recognition can complete target detection, recognition, tracking and other functions to meet the day and night security needs of application scenarios.

The product is used for intelligent security in a variety of large scenes.

Specification

category	specification
Infrared	Vanadium oxide uncooled focal plane, 640×512 resolution, 17 μm / 12 μm
Infrared	30 ~ 150mm/ 30mm ~ 180mm /25 - 225mm/ customizable
Visible light	2 million pixels
Visible light	15mm -850mm continuous zoom /customizable
PTZ performance	Vertical motion range: -75 ° ~ + 40 °; Vertical speed: stepless speed change
	Horizontal motion range: 360°; Horizontal speed: stepless
	Positioning accuracy: ≤0.01 °
	Number of preset points: 80
	Support cruise scanning/auto scanning; support real-time angle feedback
Target	Detect moving objects larger than 1.5 pixels
Target Recognition	Accurate object recognition based on deep learning for pedestrians, vehicles and other objects with more than 20 pixels in thermal infrared and
Target Tracking	Autonomously initiates tracking and autonomously controls the gimbal to track the target object within the field of view
Territory	Supports dynamic area management based on 3D
Network	Supports Onvif/RTSP/RTMP/GB28181 and other industry standard
user	Provide configuration interface, client SDK and open source functional
RS485 Protocol	1) Support Pelco D PTZ control protocol
	2) Support RS485 private protocol, providing external devices with status information of target detection, identification and tracking
interface	1 Ethernet for transmitting video, target identification and tracking

	1 RS485 interface, can be used for target information push and PTZ tracking
	1 24VAC power input
Power	Powered by 24VAC, the peak power consumption of the PTZ is 80W
Operating	-35 °C ~+ 65 °C
weight	2.5K g
Protection	IP66

Functions



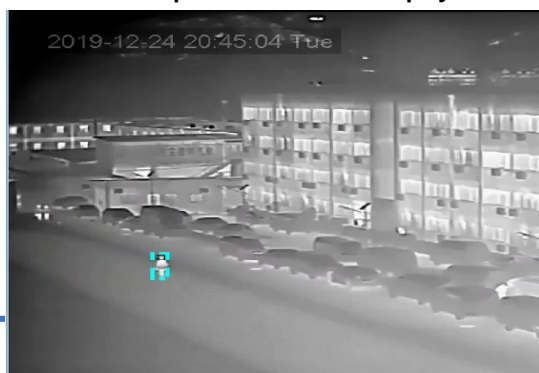
Thermal infrared and visible dual-band imaging and target recognition



Picture-in-picture and fusion display



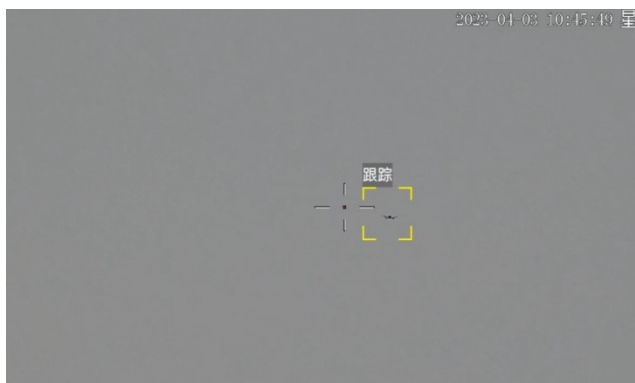
UAV identification and tracking



Target tracking in thermal infrared and visible



Drone identification and tracking



Algorithm supported

It supports target recognition, moving target detection, multiple mode tracking algorithms, regional dynamic update, adaptive laser fill light and other functions.

Target Recognition

It supports deep learning recognition of objects such as people, cars, and ships in thermal infrared videos, visible light videos, and low-light videos. Other types of object recognition algorithms can be customized to provide complete solution services.

Target Tracking

It supports multiple tracking modes, including fully automatic tracking, point-and-click tracking, moving target detection tracking, manual frame selection tracking, Beam Search tracking, etc. It also provides closed-loop PTZ and pod motion control and adaptive zoom functions during the tracking process. It provides multiple modes of solutions for situations such as target occlusion and target loss during the tracking process.

Automatic tracking

The automatic tracking mode avoids the trouble of traditional frame selection and the problem of the inability to adapt to the target size in Beam Search tracking. After accurately identifying the target type, it automatically selects the target for tracking.

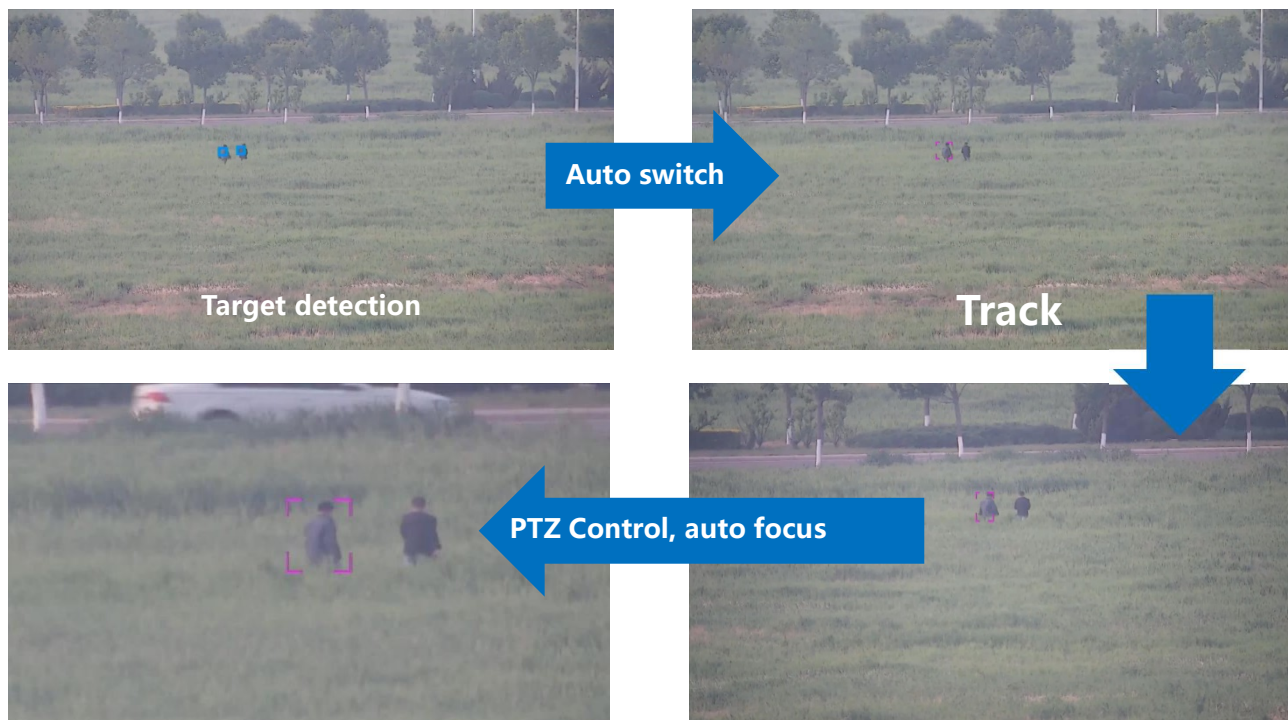


Image for target recognition and tracking at a distance of 2 km

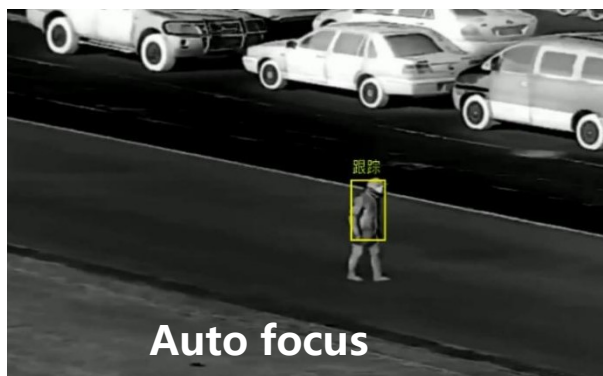
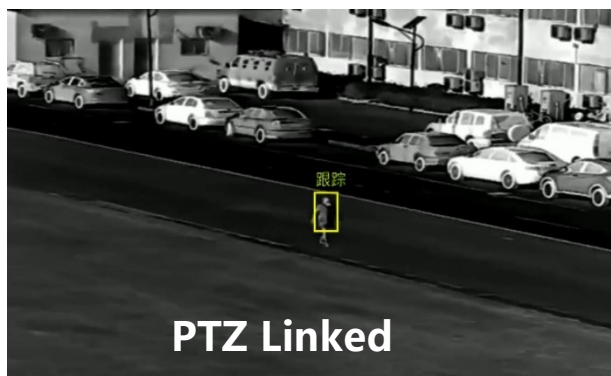
Click and track

When there are multiple identified targets in the picture, you can also select the click-to-track mode. Click the target to be tracked on the screen and the module will lock on the target for tracking.



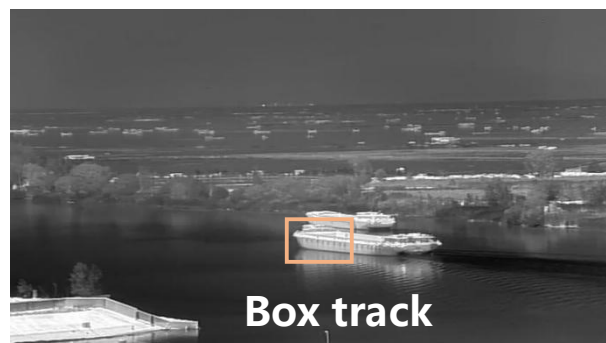
Moving target detection and tracking

Mark the area that needs to be detected in the picture. When a moving object enters the area, it will automatically lock and track it. The area supports irregular shapes.



Manual frame tracking

You can draw any box on the screen for tracking.



Beam Search Tracking

Click on the screen to track directly according to the set gate size.



Dynamic Region

Supports management of irregular boundary areas, and automatically updates the area's position in real time during pan/tilt rotation and lens zoom.

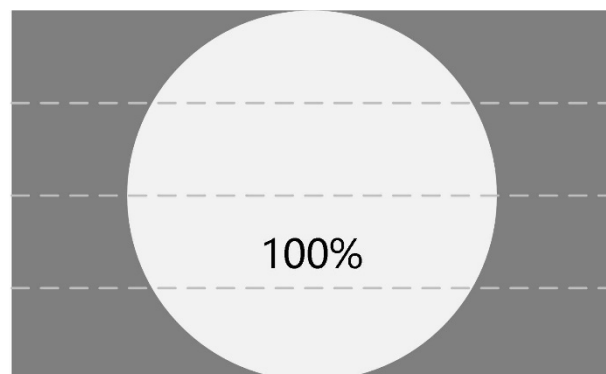
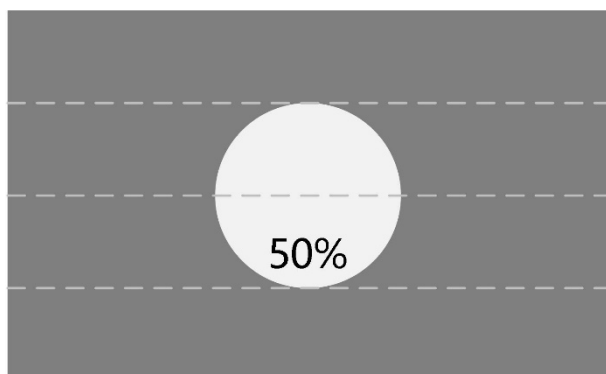


Laser fill light adaptive control

No calibration is required, and it supports adaptive control of imaging and laser fill light focal length. The percentage of the fill light area in the picture can be set at will to suit a variety of distances and application requirements.



Laser fill light adaptive zoom



Laser fill light percentage setting

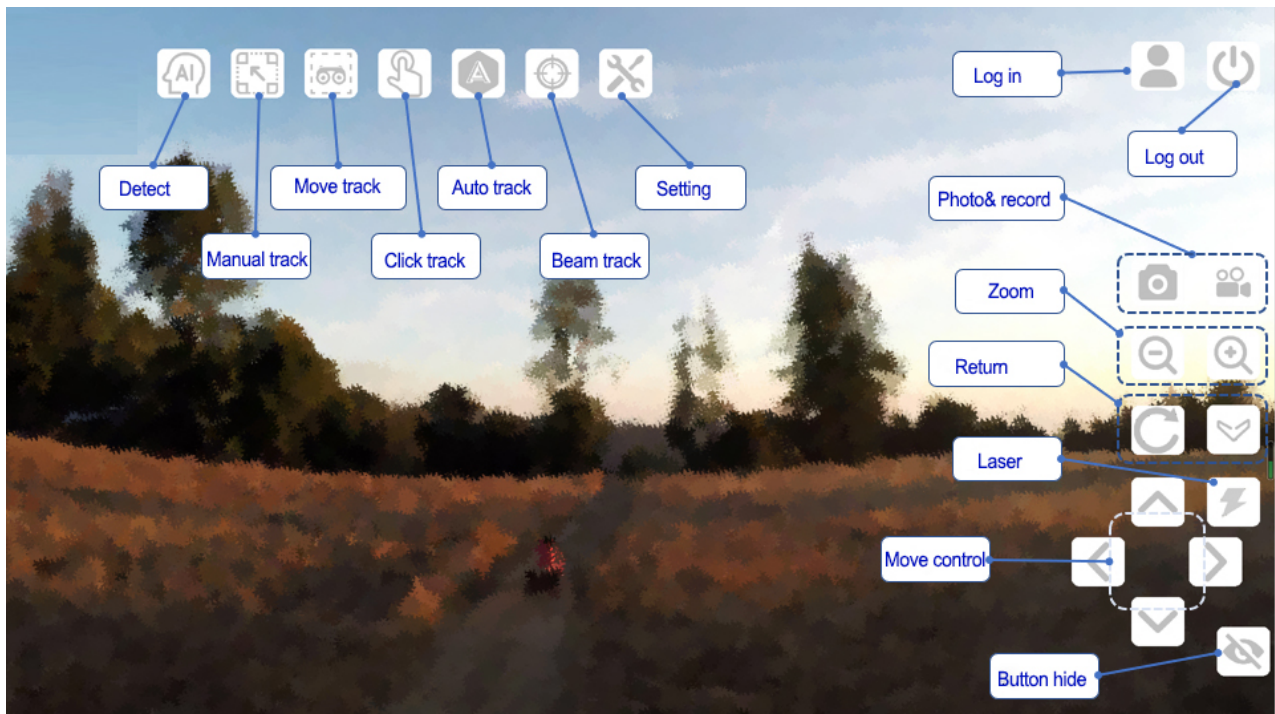
Applications

It can directly connect the PTZ and the electric lens and control them through the client software. It can realize the full autonomous control of the PTZ and the lens during the target recognition and tracking process. It supports many modes such as target recognition, full autonomous target recognition and tracking, "point and track" point selection tracking, manual tracking, Beam Search tracking, etc., to adapt to different application methods. "Point and track".

The key messages in the whole process of identification and tracking are transmitted back to the client through the SDK interface . The client

can configure the working mode, identification and tracking parameters, interface protocol, photo taking and video storage, manual PTZ and lens control. The client provides a multi-machine version that can connect to multiple devices and a touch version software for single-machine touch operation.

A brief introduction to the touch version client software



Multi-machine client software

The screenshot displays the 'AI video management platform' interface. At the top left, the title 'AI video management platform' is shown with a logo. The top right corner features navigation icons for Video, Playback, Maps, Message, and Setup, along with system status indicators for CPU (0%) and Mem (72%).

The main interface is divided into several sections:

- Device List:** A sidebar on the left showing 'Network Video' devices.
- Information:** A table below the device list with columns for 'time' and 'message'.
- Video Channels:** Four main video feeds labeled 'ch 1', 'ch 2', 'ch 3', and 'ch 4'. A 'Panoramic Video' feed is visible at the bottom center.
- Setup Panel:** Located on the right, it includes:
 - AI Mode: OFF (Start)
 - Object Class: Person, Car, Ship, Drone
 - Wave gate size: 32, 64, 128
 - Defence Area Settings: Draw Area, Clear
 - Shield Area Settings: Draw Area, Clear all areas
 - PIP Mode: Thermal in Visual
 - Settings button
- PTZ Panel:** Below the setup panel, it features a directional pad, a Speed slider (set to 20), and buttons for Zoom, Focus, Iris, and Wiper. It also has 'Data Trans to PTZ' (Send) and 'Receive' (Clear) buttons.

At the bottom, there is an 'Alarm' and 'Information' section with a timeline from 0 to 360 seconds.