AI16-BOX-B-E1

16CH AI Mini Server



Product Feature

Device Connectivity

- Connects to HD IP cameras compliant with ONVIF, RTSP, RTMP and WebRTC.
- Supports H.265/H.264 video and IP cameras up to 8 MP.

Intelligent Applications

- Total capacity: Up to 300,000 face images across 64 databases.
- Combined algorithms: Face mode and hybrid mode (face-to-person association + structured video analytics).
- Face recognition: Up to 8 video streams at full load.
- Structured video analytics: Up to 8 video streams at full load.
- Perimeter alerts: Up to 8 video streams at full load.
- Behavior alerts: Up to 8 video streams at full load.
- Supports face capture, face matching alarms and unknown-person alerts.
- Recognizes facial attributes, including gender, age, hats, glasses and masks.
- Captures faces, people, motor vehicles, non-motor vehicles and license plates; supports face-to-person and person-to-non-motor-vehicle association.
- Analyzes person attributes, including upper/lower clothing colors and styles, backpacks and safety helmets.
- Analyzes vehicle attributes, including motor vehicle type, color, make and direction of travel, and non-motor vehicle type.
- Supports license plate recognition and license-plate-to-motor-vehicle association.
- Supports smoke, flame and fire extinguisher recognition, and clutter accumulation alarms.
- Supports intelligent perimeter alerts, including area intrusion and illegal parking.
- Supports behavior alerts for running, falls, smoking, phone calls, looking at a phone, sleeping on duty, fighting and calls for help.
- Supports custom algorithm development for specific industries.

System Features

- Supports software platforms such as GB28281.
- Provides extensive RESTful APIs for integration with third-party platforms.

Application Scenarios

- Provides face recognition, structured analysis of all target types and intelligent alerts. With upper-level platform software, it supports end-to-end workflows for face capture and recognition, structured video analytics and intelligent alerts. Supports secondary development and AI algorithm expansion.
- Suitable for smart factories, hazardous chemical monitoring and various early-warning applications.
- Suitable for locations requiring face recognition, including entrances and exits of smart residential communities and office buildings, watchlist management and recognition alarms, and unknown-person identification.
- Suitable for structured analytics requiring capture of faces, people, motor vehicles, non-motor vehicles and license plates, and license plate recognition; for example, people/vehicle management in smart campuses and license plate recognition in smart communities.

Supported Algorithms (over 60 built-in algorithms)

Image Capture	
A. Structured Capture	**1)** Faces **2)** People **3)** Motor vehicles **4)** Non-motor vehicles **5)** License plates
B. Capture Functions	Scheduled capture
Recognition	
Person and Vehicle Recognition	**1)** Face recognition and matching **2)** License plate recognition and matching
Alerts	
A. Environmental Anomalies	**1)** Flame alarms **2)** Smoke alarms **3)** Fire safety equipment detection **4)** Clutter accumulation **5)** Warning signs **6)** Improper fuel unloading
B. PPE Violations	Alarms for **1)** No safety helmet **2)** No mask **3)** No workwear **4)** No safety harness **5)** No reflective vest
C. Perimeter Alerts - People	**1)** Loitering **2)** Wall climbing **3)** Intrusion **4)** Line crossing **5)** Excessive occupancy **6)** Insufficient occupancy **7)** Person leaving **8)** Overstaying
D. Abnormal behavior	**1)** Falls **2)** Smoking **3)** Phone calls **4)** Looking at a phone **5)** Running **6)** Sleeping on duty **7)** Leaving a post **8)** Crowding **9)** Fighting **10)** Calls for help
E. Perimeter alerts - vehicles	**1)** Motor vehicles in no-parking zones **2)** Motor vehicle departure **3)** Non-motor vehicles in no-parking zones **4)** Non-motor vehicle departure **5)** Riding without a helmet 6. Motor vehicle count above threshold **7)** Motor vehicle count below threshold **8)** Prohibited entry of special vehicles (19 types) **9)** Riding a motorcycle into a gas station

Model Number	AI16-BOX-B-E1
System Parameters	
CPU	Quad-core Cortex-A53, integrated NPU, up to 28.8 TOPS
Memory	2×LPDDR4X, 2×4GB

Flash	64GB eMMC
Operating System	Embedded Linux
Device Connectivity	
Video Input	ONVIF, RTSP, WebRTC, RTMP Video Resolution: Limited to 16 streams of 2 MP / 1080p video.
Video Decoding	H.264/H.265
Maximum Input Capacity	16 channels of 1080p video
Intelligent Analytics	
AI algorithms: Multiple algorithms run in parallel and can be configured per channel, including face recognition, structured analytics, behavior alerts and environmental anomaly detection.	**Face-to-person association + face recognition**: Up to 8 channels at full load Face capture, face recognition, facial attributes, person capture, person attributes and face-to-person association
	Structured video analytics: Up to 8 channels at full load **Image capture**: Faces, people, motor vehicles, non-motor vehicles and license plates **Attribute output**: Faces, people, motor vehicles, non-motor vehicles and license plates **License plate recognition** **Associations**: Face-to-person, vehicle-to-license-plate and person-to-non-motor-vehicle
	Behavior Detection Algorithms **Abnormal behavior**: **1)** Falls **2)** Smoking **3)** Phone calls **4)** Looking at a phone **5)** Running **6)** Sleeping on duty **7)** Leaving a post **8)** Crowding **9)** Fighting **10)** Calls for help
	Alert Algorithms - Intelligent Alerts **A. Environmental anomalies**: **1)** Flame alarms **2)** Smoke alarms **3)** Fire safety equipment detection **4)** Clutter accumulation (8 waste types) **5)** Warning signs **6)** Improper fuel unloading **B. PPE violations**: Alarms for **1)** No safety helmet **2)** No mask **3)** No workwear **4)** No safety harness **5)** No reflective vest **C. Perimeter alerts - people**: **1)** Loitering **2)** Wall climbing **3)** Intrusion **4)** Line crossing **5)** Excessive occupancy **6)** Insufficient occupancy **7)** Person leaving **8)** Overstaying **D. Perimeter alerts - vehicles**: **1)** Motor vehicles in no-parking zones **2)** Motor vehicle departure **3)** Non-motor vehicles in no-parking zones **4)** Non-motor vehicle departure **5)** Riding without a helmet **6)** Motor vehicle count above threshold **7)** Motor vehicle count below threshold **8)** Prohibited entry of special vehicles (19 types) **9)** Riding a motorcycle into a gas station
Event Reporting	1) Face capture, face recognition and facial attribute results

	2) Capture and attributes of faces, people, motor vehicles, non-motor vehicles and license plates; license plate recognition results 3) Security alerts 4) Scheduled capture
Faces	Capture rate ≥ 99%
	False capture rate < 1%
	Allowlist recognition pass rate > 99.5%
	False recognition rate < 0.5%
	Maximum face database: 300,000 portraits
People	Capture rate ≥ 95%
	False capture rate < 1%
Motor Vehicles	Capture rate ≥ 90%
	False capture rate < 1%
Non-motor Vehicles	Capture rate ≥ 95%
	False capture rate < 1%
License Plates	Capture rate ≥ 95%
	False capture rate < 1%
	Recognition rate ≥ 95%
Other Alerts	Capture rate ≥ 90%
Platform Expansion	
AI Expansion	Supports AI algorithm expansion and remote upgrades/deployment.
Platform Integration	Integration with upper-level platforms via UDP, TCP, HTTP and Web APIs
National Standard Support	Supports GB28181 platform cascading.
Interfaces	
Network Ports	2 x 100/1000 Mbps Ethernet ports
USB Ports	2 x USB 2.0 ports
HDMI Port	1 x 2.0 HDMI port
TF Card Slot	1 x on-board TF card slot
System Functions	
Face Recognition	Employee access at entrances/exits; watchlist management and recognition alarms; unknown-person identification
Structured Video Analytics	Capture and attribute analysis of faces, people, motor vehicles, non-motor vehicles and license plates; license plate recognition
Network Protocols	TCP/UDP/HTTP/MULTICAST/DHCP/FTP/NTP/HTTPS/RTSP, etc.
Embedded Web Interface	Supports plugin-free video viewing and alarm image information lists.
Log Search	Query, search and display capture information for faces, people, motor vehicles, non-motor vehicles and license plates.
Environmental Requirements	
Operating Temperature	-20°C to +60°C

Storage Temperature	-30°C to +70°C
Relative Humidity	10% to 90% RH, non-condensing
Other Specifications	
Power Supply	DC 12V±10%, 3 A
Chassis	Metal Chassis
Dimensions (L x D x H)	112 x 30 x 105 mm
Weight	< 2 kg
Package Dimensions	166 x 50 x 250mm
Overall Dimension	

