Edge & Generative : The Hybrid AI Revolution

Unparalleled speed, reliability and accuracy in video analytics

compliant NDAA

Intelligence CCTV Solution Korea Internet & Security Agency CERTIFICATE

2023 Korea Security Product Innovation Award

EdgeDX

About us

EdgeDX is a leader in Digital Transformation from the Edge.

Combining the performance of autonomous driving-based chipsets with EdgeDX's advanced AI video analysis technology to provide unmatched accuracy and system stability.

Hybrid AI Boost

Combines the precise analysis capability of Edge AI with Generative AI to understand rich contextual details with human-level recognition.

Standalone Device

A standalone device analyzing up to 16 video streams without a separate server. Perfectly compatible with existing CCTV infrastructure.

False Alarm Minimization

Significantly reduces unnecessary alarms and notifies only real threats through the multi-stage False Alarm Prevention Filter.

Broad Compatibility

Excellent scalability supporting various protocols like ONVIF, RTSP, HTTP, TCP, MQTT and VMS integration

Certified Security

Suitable for public institutions and critical facilities by obtaining NDAA compliance and KISA security certification.

Over 60 AI Apps

Provides over 60 different AI analysis apps including intrusion detection, fire detection, fall detection, and crowd density analysis.

15 Years+
Video Analytics Experiences

10 Years+
AI Deep Learning Experiences

20 Years+
Embedded Development Experiences

250,000 +
AI Channels Deployed

80%+
Engineer Ratio

Edge & Generative: The Hybrid AI Revolution

Delivering powerful analytical capabilities by combining Edge AI video analytics with Generative AI. EdgeDX sets a new standard for AI video analytics through the Hybrid AI revolution.

Key Technology Summary

Robust Durability

Equipped with AI DSP for autonomous driving to maximize product durability and ensure stable operation in various environments.

Proprietary Multi-layer Algorithm

Dramatically reduces false alarms with multi-stage filtering technology and provides precise object recognition rates even in complex situations.

Standalone Edge Solution

An efficient All-in-One AI system capable of analyzing up to 16 channels independently without a separate server.

Hybrid AI Boost

Combines the precision of Edge AI with the insights of Generative AI to support next-generation video analysis that understands context.

60+ Intelligent AI Apps
All the analytics solutions you need

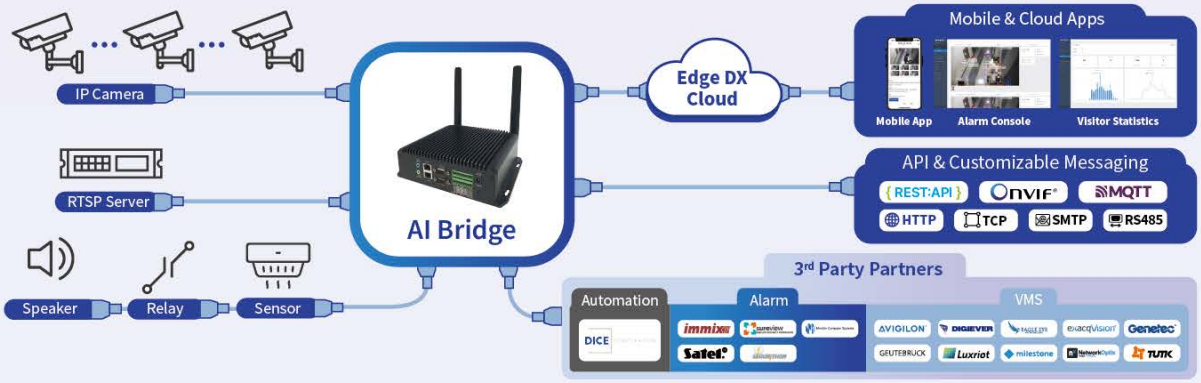
You can run multiple AI algorithms simultaneously on a single channel. From basic security functions to advanced behavior analysis, industrial safety, and retail insights, EdgeDX provides all the AI applications needed for your site.

2023 Korea Security Product Innovation Award

Korean Government-Affiliated Authority (KISA Intelligent CCTV Solution Certification)

Intrusion	Loitering	Virtual Fence	Forklift
Fire/Smoke	No Helmet	Fall Detection	LPR
Heatmap	Violence	Animal	Crowd Counting

AI Bridge Intelligent Video Analysis AIoT Gateway



Key Features of AI Bridge

- ✓ 60 + intuitive AI Apps capable(On-premises)
- ✓ Multiple AI apps can run simultaneously on a channel
- ✓ Advanced human behavior analysis
- ✓ Hybrid AI boost mode support
- ✓ Multiple devices management portal
- ✓ Supports various protocols and 3rd party platforms
- ✓ Wide temperature range(Fan-Less): -30°C(-22°F) ~ 70°C (158°F)
- ✓ Support up to 16 camara channels
- ✓ P2P based mobile alarm viewer
- ✓ LTE & GPS support (option)
- ✓ Internal recording with M.2 NVME SSD (optional)
- ✓ Cloud based dashboard (option)

Demanded by the Field Unmatched Durability

AI Bridge operates even when standard servers fail.
Experience 365 days of uninterrupted edge computing with automotive-grade reliability, fanless design, and extreme temperature resistance.

Why do 'Server-Type' Analytics Fail in the Field?

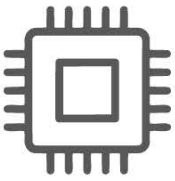
The field, unlike an indoor server room, demands completely different hardware.

Comparison	Standard Server/PC (Risk)	AI Bridge (Solution)
Operating Temp	⚠ 0~40°C Limited (Overheat Risk)	✓ Operating Temp
Cooling Method	⚠ Cooling Fan (Dust, Failure)	✓ Cooling Method
Maintenance	⚠ Filter Cleaning & Fan Replacement	✓ Maintenance
Off-hours	⚠ AC Off → System Shutdown	✓ Off-hours

Automotive-Grade AI DSP Applied

Applied AI processors of the grade used in autonomous vehicles where safety is critical. Performs stable video analysis without data loss even under vibration, shock, and power instability.

- **Automotive Grade Components**
- **Low-power High-efficiency NPU Architecture**



Automotive Grade AI DSP Chip
High Performance NPU

Eliminating the Cause of Failure: Fanless Design

Rotating fans suck in dust and eventually stop. AI Bridge eliminates the fan, using the entire specially designed aluminum case as a heatsink to completely block dust intake.

~~Cooling Fan~~
Noise : **Silent**

Heat Sink Case
Dust Intake : **Sealed**

Operating Temperature

From -30°C(-22°F) To 70°C (158°F)

On outdoor poles in mid-winter (-30°C), inside sealed factories in mid-summer (70°C).
AI Bridge operates without performance degradation across this wide range.

Use Cases by Industry

Discover EdgeDX solutions proven in various environments.

Industrial & Construction Safety

Prevents accidents by detecting worker helmet compliance, dangerous area access, heavy equipment proximity, and falls in real-time.

- Danger Detection
- PPE Monitoring
- Worker Fall Detection

Retail & Store Management

Optimizes store operations and provides marketing insights through visitor counting, heatmap analysis, and queue management.

- Store Congestion
- Dwell Time Analysis
- VIP/Blacklist Mgmt

Smart City & Traffic

Builds urban safety nets through traffic flow analysis, pedestrian safety detection, illegal parking enforcement, and crosswalk alerts.

- LPR
- Traffic Analysis
- Pedestrian Safety

Public Safety & Security

Supports immediate security response by detecting perimeter intrusion, loitering, and violence in major facilities.

- Virtual Fence
- Violence/Loitering
- Early Fire Detection

Click For Details

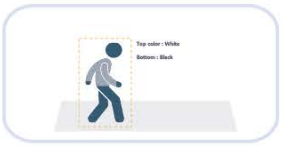
60+ On-Premise AI Apps and more

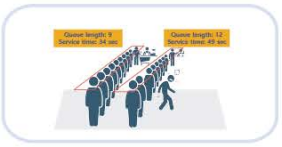
Multiple AI apps can run simultaneously on a channel

Basic

Dynamic Privacy Masking

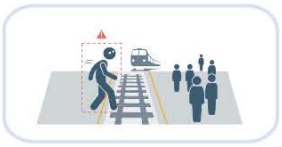
Dynamic Face Masking


Basic Attribute


Queue Management

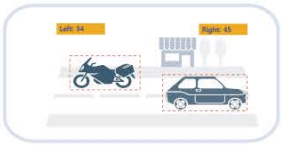
Heatmap

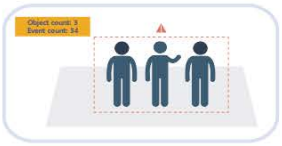
License Plate Masking

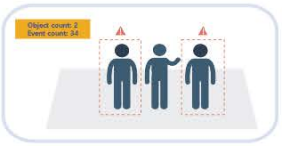

Intrusion Detection

Loitering Detection

People Counting

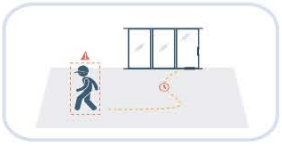

Vehicle Counting


Zone Counting

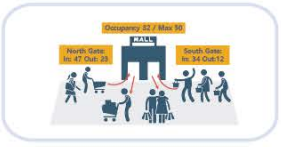

Multi Zone Counting

Virtual Fence

Stopping Detection


Stay & Go

Enter/Exit Detection

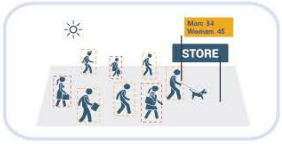

Occupancy Counting

Occupancy Car Counting

Speed Anomaly Detection

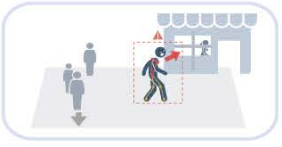
Advanced

Crowd Detection



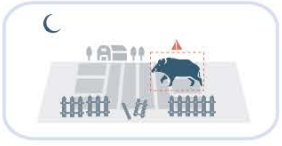
Advanced Visitor Analysis

Hand & Foot Intrusion


Intentional Body Gaze Detector

Imminent Threat

Fallen Person Detection


Animal Detection

Fire & Smoke Detection

60+ On-Premise AI Apps and more

Advanced

Vehicle Type Counting

Vehicle Type Detection

Thermal Intrusion Detection

Advanced Attribute

Extra

License Plate Recognition

Advanced Heatmap

No PPE

Illegal Dumping

Aggressive Detection

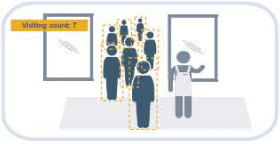
PTZ Tracking

Forklift Detection

Forklift Non-Driver Detection

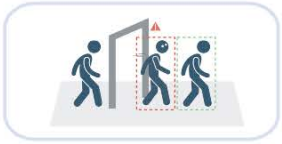
Forklift No Helmet

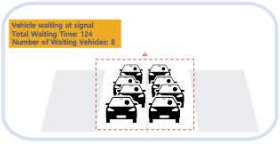
Work Vehicle Hazard Detection


Staff Exclusion People Counting

Bullying Detection

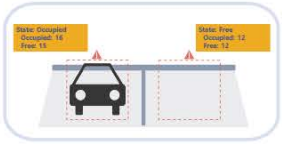
Dust-Proof Clothing Detection

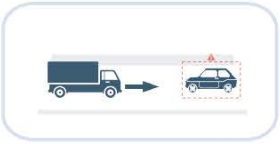

Tailgating


Vehicle Queue Management

Covered Face Detection

Human Prolonged Stay


Vehicle Zone Presence


Reverse Movement Detection

Road Pedestrian Detection

No Mask

Object Location Tracking

+ and more
Hybrid AI Boost AI Apps

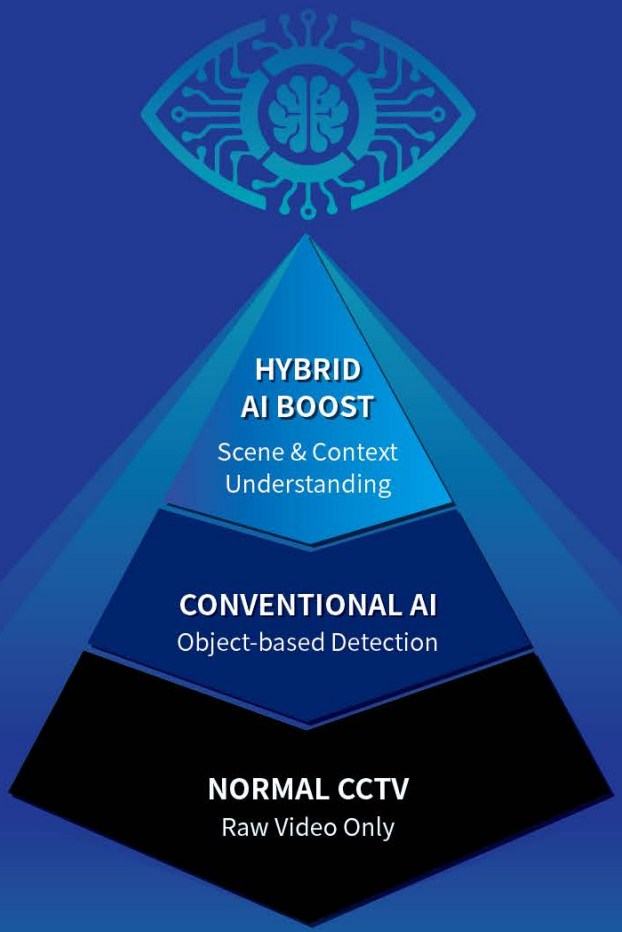
Hybrid AI Boost

Beyond Object Detection to Human-like Context Insight

EdgeDX's high-performance edge algorithms and dedicated EdgeDX helper server-based hybrid technology set a new standard for real-time situational awareness beyond physical limits.

Intelligence for Situational Context, Hybrid AI Boost

The peak of intelligence that understands context beyond simple object vision.



Intelligence Hierarchy

Combining 99% real-time edge processing with 1% Cloud based EdgeDX helper server knowledge to achieve human-level contextual awareness.

99% Real-time Edge

Real-time Edge Processing

Instant on-device detection and basic filtering with zero latency.

1% Contextual Helper Server

Intelligent Situational Awareness

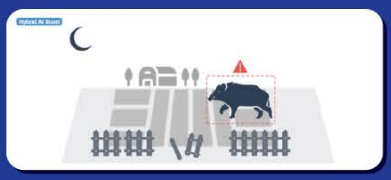
When ambiguity arises, Helper server insights provide human-like situational context and judgment.

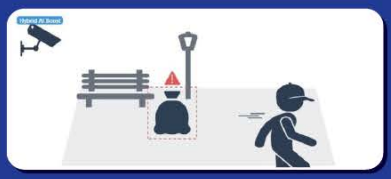
Hybrid AI Boost Apps

Click For Details

Gun Detection

Phone-Walking Detection


Animal Detection+


Illegal Dumping+

Unsafe Lifting

Spill Detection

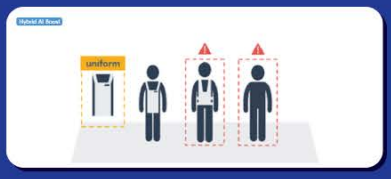
Bear Detection

Fire & Smoke Detection+

Imminent Threat+

Helmet Not Wearing

Fallen Person Detection+



Out of Uniform

Under-Age Detection

Aggressive Detection+

CloseCam Covered Face

Maximized Detection & Precise False Alarm Filtering

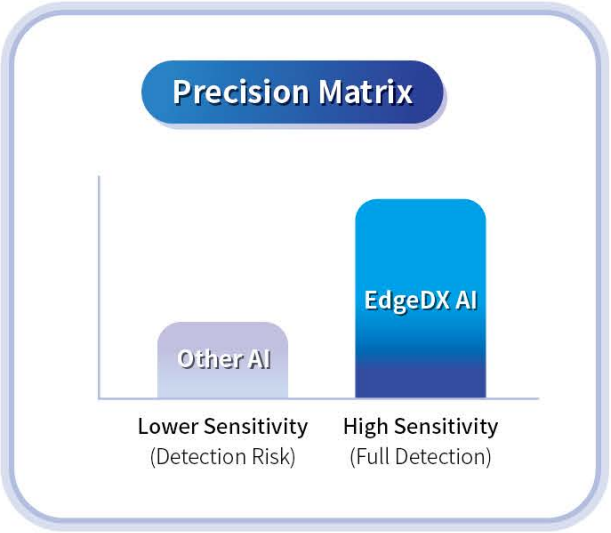
High sensitivity detection is essential for accident prevention. While others lower sensitivity to avoid false alarms, EdgeDX maintains peak sensitivity and eliminates false alarms with a 9-step filter.

Superior Detection

Captures threats even in night, fog, long range, or partial occlusions.

9-Step Precise Filtering

Analyzes object shape and spatio-temporal patterns to clear meaningless alarms.



Real-world Scenarios

Waste Incinerator

99% Fire False Alarm Reduction

Distinguishes between scattered dust and actual smoke using situational analysis.

Secure Zone Access

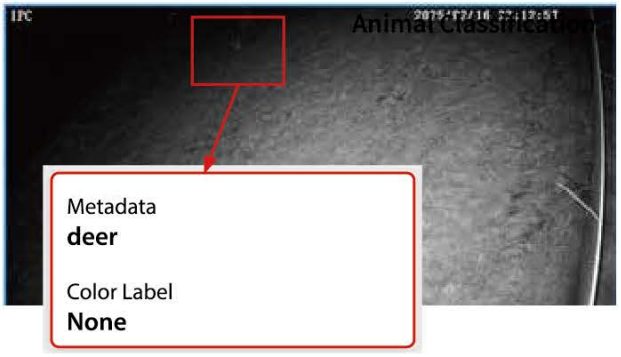
Instant Minor Entry Detection

Uses clothing, physical proportions, and companion relationships to identify minors beyond face analysis.

Retail Theft Prevention

Real-time Behavior Recognition

Detects complex indoor situations like theft or loitering just like a human guard.



Precise object analysis in even the most challenging environments.

Object classified as a '**Deer**'

EdgeDX Solutions & Applications

AI Bridge Series

Click For Details

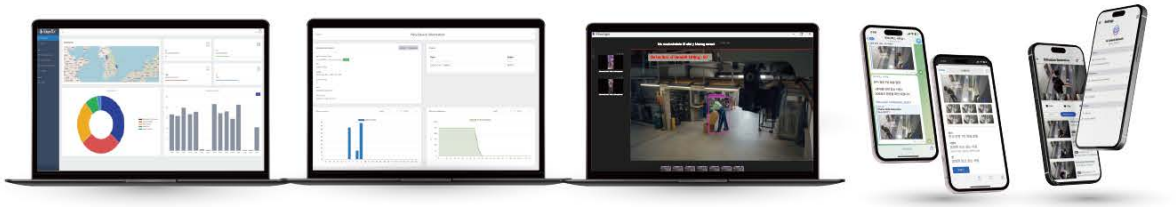
AIB-TE1-04 (4CH)

AIB(L)-TS2-8 (8/16CH)

AIB(L)-TS3-16 (16CH) (5G, GPS)

Management software suite

Device Portal | Alarm Console | Industrial Safety Statistics



Dashboard | Remote Device Management | Event Agent | SNS Messenger | Mobile Viewer

Sector Solutions

Perimeter Security

Retail

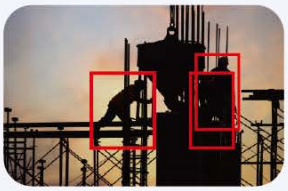
Business Intelligence

Intelligent Traffic System

Public Safety

Hospital

Smart Building



Construction

AI Apps

Basic

- Dynamic Privacy Masking
- Dynamic Face Masking
- Basic Attribute (Color of Clothes)
- Queue Management
- Heatmap
- License Plate Masking
- Intrusion Detection
- Loitering Detection
- People Counting
- Vehicle Counting
- Zone Counting
- Multi-Zone Counting
- Virtual Fence
- Stopping Detection
- Stay & Go
- Enter/Exit Detection
- Occupancy Counting
- Occupancy Car Counting
- Speed Anomaly Detection

Hybrid AI Boost

- Gun Detection
- Illegal Dumping +
- Bear Detection
- Helmet Not Worn
- Under-age Detection
- Phone-walking Detection
- Unsafe Lifting
- Fire & Smoke Detection +
- Fallen Person Detection +
- Aggressive Detection +
- Animal Detection +
- Spill Detection
- Imminent Threat +
- Out of Uniform
- CloseCam Covered Face

Advanced

- Crowd Detection
- Advanced Visitor Analysis (Gender)
- Hand & Foot Intrusion
- Intentional Body Gaze Detector
- Imminent threat
- Fallen Person Detection
- Animal Detection
- Fire & Smoke Detection
- Vehicle Type Counting
- Vehicle Type Detection
- Thermal Intrusion Detection
- Advanced Attributes

Extra

- LPR - US, Europe, JP, KR
- Advanced Heatmap
- No PPE
- Illegal Dumping
- Aggressive Detection
- PTZ Tracking
- Forklift Detection
- Forklift Non-Driver Detection
- Forklift No Helmet
- Work Vehicle Hazard Detection
- Staff Exclusion People Counting
- Bullying Detection
- Dust-proof Clothing Detection
- Tailgating
- Vehicle Queue Management
- Covered Face Detection
- Human Prolonged Stay
- Vehicle Zone Presence
- Reverse Movement Detection
- Road Pedestrian Detection
- No Mask
- Object Location Tracking

Management software suite

Cloud based Application Service

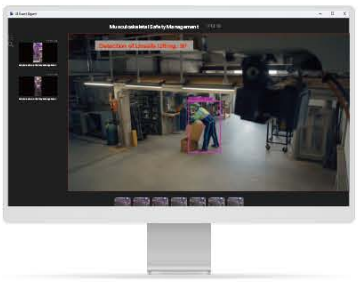
Dashboard

Alarm Console

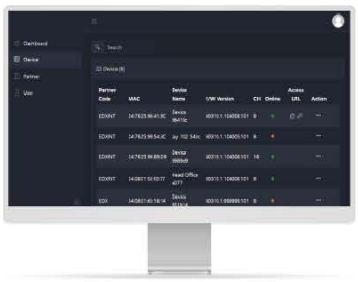
Data Visualization

Device Management & Health Check

Event Agent for Desktop



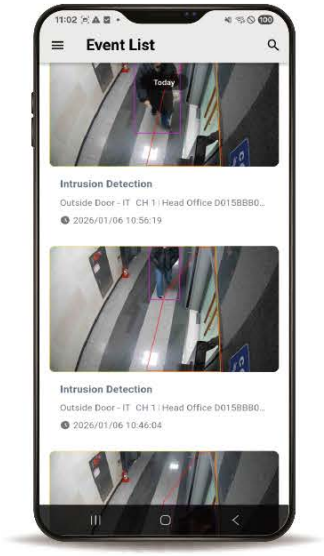
Device Management Portal



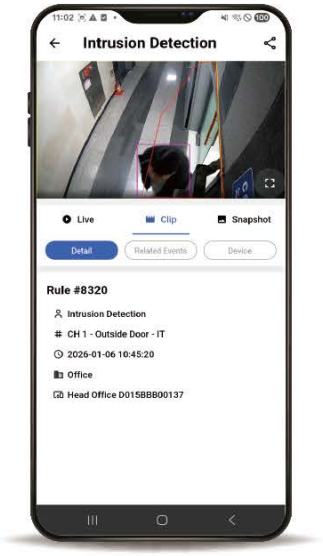
Multiple devices manager

SNS Messenger Service

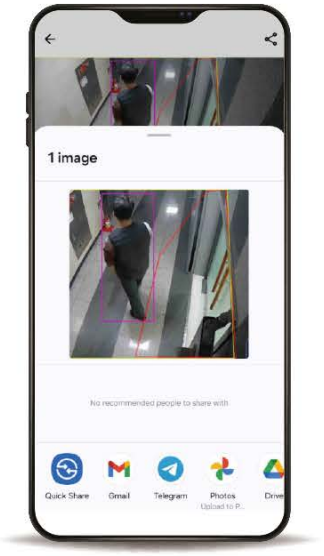
Mobile Viewer



Event Lists



Live/Playback/Actions

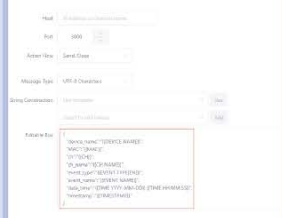


Share Screenshots

Integration Methods

Customizable Event Transmission via Network & Serial Interfaces

- Users can customize event messages without coding through an editable UI
- Supports HTTP, TCP, MQTT, SMTP, FTP, RS232/485



Proprietary Integration

- Full support through plug-ins for major VMS & Alarm Monitoring Systems

REST API

- Various web
- Any legacy places
- Any devices

Firefox

Google Chrome

Safari

Opera

Microsoft Edge

ONVIF

- Annotated video streaming
- Event metadata
- Interoperability with VMS

Supports Proprietary Recording

- M.2 NVMe SSD up to 4TB

Customizable Event Transmission via Network

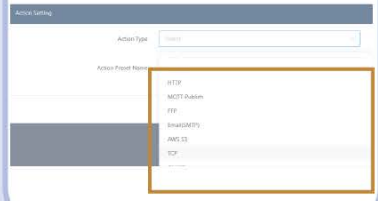
HTTP, TCP, SMTP, FTP, MQTT etc. Seamless integration without customization.
Provided Templates and tokens, users can easily send metadata, snapshots, and videos to a receiving server.

Protocol selection

HTTP TCP MQTT

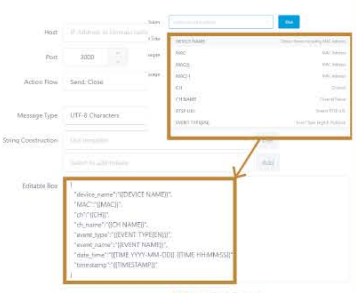
AWS S3 SMTP(email)

HTP ONVIF



Editing Messages

Using Tokens for edition



Messages

Adding Snapshots and Video

Specifications

AIB-TS3-16

16-channel
Full 16CH mode

Event Action	System Events	Tamper Detection, Alarm In, Virtual Alarm In, Video Loss / Recovery, Disarm, Recurrence, Login, System Start
	Action Handlers	HTTP, TCP, FTP, E-mail, S3, VMS, Onvif, Audio Back Channel (Camera speaker)
	Pre/Post snapshot	Yes
	Annotated Video Stream	Yes
	Annotated Video Stream	Yes
Video	Max. Video Input resolution	4K @ 120 fps (2M @ 480 fps)
	Video Input Method	RTSP, RTSP over HTTP/S, Onvif
	Supported Input Video Format	H.265 / H.264
	Video Output Stream Method	RTSP over TCP/UDP, RTSP over Websocket, RTSP over HTTP/S, HLS
	Recording(Video, Snapshot)	2x M.2 M-Key Slot (for M.2 2280 NVMe SSD with optional)
Audio	Audio Input	1 x Audio Line-In, (10KOhm, 1Vrms), (3.5mm audio phone jack)
	Audio Output	1 x Audio Line-Out, (600Ohm, 1Vrms), (3.5mm audio phone jack)
Interface	USB	1 x USB3.0
	RS-485	1 x RS-485 (Full-duplex 4line T/B)
	RS-232	1 x RS-232 (D-SUB9)
	Wiegand	1ch input / 1ch output
	LAN	2 x 10/100/1000 BASE-T Ethernet (LAN1/LAN2)
	Mini PCIe Slot(LTE, GPS module)	1x Mini-PCIe (for LTE-cat4 / GPS(GNSS) Modem module (OPTION)
	SIM Slot	1x micro SIM Slot (OPTION)
	Antenna	2x 50Ω SMA Female for Main Antennas (OPTION) 1x 50Ω SMA Female for GPS(GNSS) Antenna (OPTION)
Alarm I/O	Alarm Input	4CH, DI(0-30V Input), Pulled up to 5V via 10KOhm
	Relay Output	4CH, Dry contact Relay(30VDC), NO/COM/NC(Terminal Block)
ETC	Watchdog	Yes
	RTC	Yes
	Fan-less(No fan)	No FAN
	Factory Reset Button	Yes
	LED Indicators	1 x PWR LED (3 Color) / 1 x Status LED (3 Color) 1 x ALARM IN LED (3 Color) / 1 x ALARM OUT LED (3 Color)
Power	Power Supply	12V/3.3A adaptor DC +9 ~ +36V (DC Input Voltage)
	Power consumption	19 Watts
Environment	Temperature/Humidity	-30°C~70°C(-22°F~158°F)/10~90% NC(Without NVMe SSD) -20°C~60°C(-4°F~140°F)/10~90% NC(With commercial NVMe SSD)
Chassis	Dimension (WxDxH)	213.6 x 175.8 x 60 mm (8.41" x 6.92" x 2.36")
	Weight (Net/Gross)	1.5 / 2.2 Kg (3.31 / 4.85 lbs)
Certification		CE, UKCA, FCC, KC, KISA AI Certification

* KISA AI Certification: Official Korean Government-Affiliated AI Intelligent CCTV Performance Certification

		AIB(L)-TS2-08	AIB-TE1-04
		8-channel 16-channel extension mode support (For monitoring)	4-channel -
Event Action	System Events	Tamper Detection, Alarm In, Virtual Alarm In, Video Loss / Recovery, Disarm, Recurrence, Login, System Start	Tamper Detection, Alarm In, Virtual Alarm In, Video Loss / Recovery, Disarm, Recurrence, Login, System Start
	Action Handlers	HTTP, TCP, FTP, E-mail, S3, VMS, Onvif, Audio Back Channel (Camera speaker)	HTTP, TCP, FTP, E-mail, S3, VMS, Onvif, Audio Back Channel (Camera speaker)
	Pre/Post snapshot	Yes	Yes
	Annotated Video Stream	Yes	Yes
	Annotated Video Stream	Yes	Yes
Video	Max. Video Input resolution	4K @ 60 fps (2M @ 240 fps)	4K @ 30 fps (2M @ 120 fps)
	Video Input Method	RTSP, RTSP over HTTP/S, Onvif	RTSP, RTSP over HTTP/S, Onvif
	Supported Input Video Format	H.265 / H.264	H.265 / H.264
	Video Output Stream Method	RTSP over TCP/UDP, RTSP over Websocket, RTSP over HTTP/S, HLS	RTSP over TCP/UDP, RTSP over Websocket, RTSP over HTTP/S, HLS
	Recording(Video, Snapshot)	1x M.2 M-Key Slot (for M.2 2280 NVMe SSD with optional)	1x M.2 M-Key Slot (for M.2 2280 NVMe SSD with optional)
Audio	Audio Input	1 x Audio Line-In, (10KOhm, 1Vrms), (3.5mm audio phone jack)	1 x Audio Line-In, (10KOhm, 1Vrms), (3.5mm audio phone jack)
	Audio Output	1 x Audio Line-Out, (600Ohm, 1Vrms), (3.5mm audio phone jack)	1 x Audio Line-Out, (600Ohm, 1Vrms), (3.5mm audio phone jack)
Interface	USB	1 x USB3.0	1x USB2.0
	RS-485	1 x RS-485 (Full-duplex 4line T/B)	-
	RS-232	1 x RS-232 (D-SUB9)	-
	Wiegand	1ch input / 1ch output	-
	LAN	2 x 10/100/1000 BASE-T Ethernet (LAN1/LAN2)	2 x RJ-45 10/100 BASE-T Ethernet (LAN1/LAN2)
	Mini PCIe Slot(LTE, GPS module)	1x Mini-PCIe (for LTE-cat4 / GPS(GNSS) Modem module (OPTION)	-
	SIM Slot	1x micro SIM Slot (OPTION)	-
	Antenna	2x 50Ω SMA Female for Main Antennas (OPTION) 1x 50Ω SMA Female for GPS(GNSS) Antenna (OPTION)	-
Alarm I/O	Alarm Input	4CH, DI(0-30V Input), Pulled up to 5V via 10KOhm	4CH, DI(0~30V Input), Pulled up to 5V via 10KOhm
	Relay Output	4CH, Dry contact Relay(30VDC), NO/COM/NC(Terminal Block)	1CH, Dry contact Relay(30VDC), NO/COM/NC(Terminal Block)
ETC	Watchdog	Yes	Yes
	RTC	Yes	Yes
	Fan-less(No fan)	No FAN	No FAN
	Factory Reset Button	Yes	Yes
	LED Indicators	1 x PWR LED (3 Color) / 1 x Status LED (3 Color) 1 x ALARM IN LED (3 Color) / 1 x ALARM OUT LED (3 Color)	1 x PWR LED (3 Color) / 1 x Status LED (3 Color)
Power	Power Supply	12V/3.3A adaptor DC +9 ~ +36V (DC Input Voltage)	12V/3.3A adaptor DC +9 ~ +36V (DC Input Voltage)
	Power consumption	16 Watts	6 Watts
Environment	Temperature/Humidity	-30°C~70°C(-22°F~158°F)/10~90% NC(Without NVMe SSD) -20°C~60°C(-4°F~140°F)/10~90% NC(With commercial NVMe SSD)	-30°C~70°C(-22°F~158°F)/10~90% NC(Without NVMe SSD) -15°C~50°C(5°F~131°F)/10~90% NC(With commercial NVMe SSD)
Chassis	Dimension (WxDxH)	213.6 x 175.8 x 60 mm (8.41" x 6.92" x 2.36")	114 x 153 x 28 mm (4.49" x 6.02" x 1.10")
	Weight (Net/Gross)	1.5 / 2.2 Kg (3.31 / 4.85 lbs)	0.45 / 1.05 kg (0.99 / 2.31 lbs)
Certification		CE, UKCA, FCC, KC, KISA AI Certification	CE, UKCA, FCC, KC, KISA AI Certification

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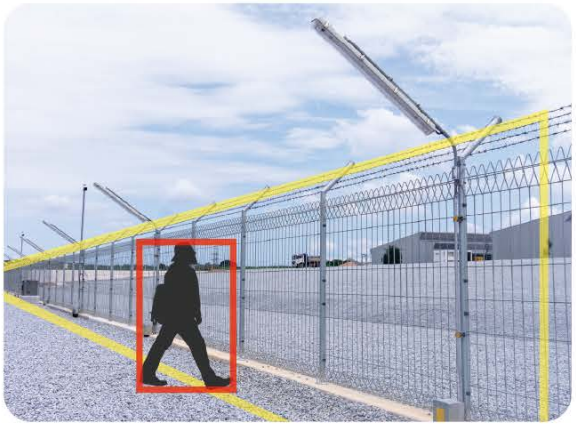
Various Use Cases

Perimeter security & safeguard assets



Overview

We utilize AI video analysis to promote the safety and protection of residential buildings, government facilities, and critical infrastructure, enabling proactive management by detecting abnormal behavior and allowing for a proactive response from administrators to ensure the safety of the facilities and safeguard assets.

Benefits

- Real-time risk perception accident prevention through residential occupant protection
- Intrusion alarms
- Broadcasting warnings through IP camera microphone
- Effective management of critical assets
- Boundary management of specialized facilities like prisons

Efficient store management

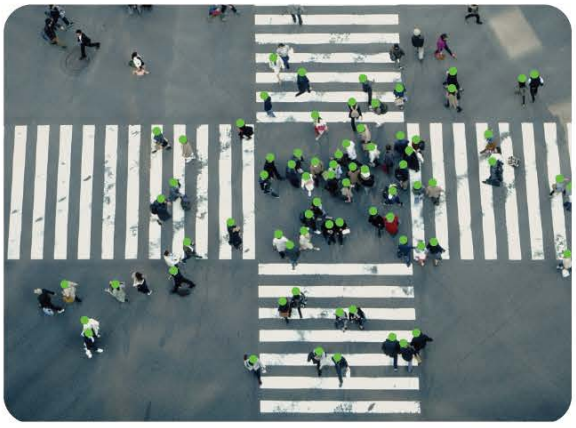
Overview

Our system provides more sophisticated heatmaps based on the specific interests of visiting customers, enabling precise analysis for efficient store management. It accurately tracks the number of customers entering the store, allowing for density adjustment and better resource allocation. It can identify unoccupied tables and establish restricted areas to prevent unauthorized access. Moreover, it captures the moment a customer enters the store, facilitating prompt customer assistance. Leveraging diverse analytical data, it enhances store management efficiency and optimizes product layout based on customer preferences.

Benefits

- Layout optimization based on enhanced heatmaps
- Density adjustment by monitoring the number of entering customers
- Prompt customer assistance through identification of unoccupied areas
- Enhanced security and prevention of intrusions
- Efficient resource allocation based on data insights

Public safety management



Overview

AI is highly effective in ensuring public safety through the management of crowd density, personnel control, establishment of secure zones, intrusion monitoring, detection of violence, and identifying instances of falling, among others. By utilizing AI technology, public safety measures can be enhanced and strengthened, allowing for proactive monitoring and rapid response to potential threats. The capabilities of AI enable the identification and classification of various safety-related incidents, facilitating the protection and well-being of individuals in public spaces.

Benefits

- Efficient crowd management
- Timely response to emergencies
- Minimized risks to public safety
- Establishment of safe zones
- Reduced accidents and injuries
- Prevention of unauthorized access
- Proactive monitoring of public spaces

Construction safety & incoming material management

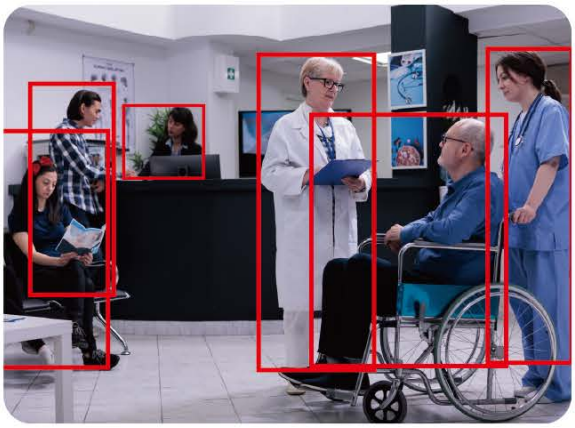
Overview

Implementing AI video analysis on construction sites can significantly enhance worker safety. Moreover, it enables more streamlined management of construction material delivery and inventory, fostering greater efficiency on-site.

Benefits

- Worker Safety
- Risk Mitigation
- Incident Response
- Inventory Management
- Regulatory Compliance
- Cost-saving effect on manpower for management

Retirement Homes and Assisted Living Facilities



Overview

AI video analysis enhances safety management in elderly care by addressing falls, wandering, intrusion, and violence. It promptly detects falls, monitors movements to prevent wandering, identifies unauthorized access, and detects signs of violence. This ensures a safer environment for elderly residents.

Benefits

- Immediate bed fall response
- Dementia patient management
- Emergency detection
- Fall prevention and assistance
- Enhanced security measures

Smart intersections and crosswalks

Overview

Integration with traffic management systems allows for safer intersection and crosswalk management through features such as left-turn vehicle volume control, lane-specific waiting vehicle control, pedestrian control on the crosswalk, detection of pedestrians on the crosswalk, and warning alerts or audio broadcasts through signal or audio broadcast systems. It also enables the detection of pedestrians and children in specific zones, enhancing overall safety and management of intersections and crosswalks.

Benefits

- Enhanced safety
- Efficient intersection management
- Improved pedestrian control
- Accurate detection of pedestrians
- Real-time warning alerts
- Specific zone detection(pedestrians, children) Optimal crosswalk management
- Advanced traffic monitoring
- Incident monitoring - stop, reverse, pedestrian
- Enable PTZ auto-tracking on evented object with separated PTZ

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