Efficient and Smart
On-Device Intelligent Video Surveillance System

BRC AX Cube

Braincheese

Braincheese

Braincheese Co., Ltd.

Braincheese is a company that prioritizes safety and trust above all,
transcending the uncertainties of the modern era.
Through continuous innovation and technological investment, we stay ahead of the evolving market demands and deliver optimized security solutions.
Driven by the dedication of outstanding engineers and researchers,
and strengthened by our global partnerships, we are leading the global market while designing a future that brings real value to people's lives beyond mere technology.

As a partner that constantly innovates for a safer tomorrow, Braincheese is committed to building a safer and more convenient world together with you.

Lee Min-jae, CEO Braincheese Co., Ltd.

KC Certification Number
(supply license number for
public institution in korea)
R-R-BRC1-AICUBE-CH16

Public Procurement
Product List Number in Korea
43211594-25929474

Registered on Venture Nara

BRC AX Cube

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Built on advanced AI video analysis technology, BRC AX Cube.
Cube delivers innovative solutions across a wide range of industries.

In particular, by leveraging cutting-edge technologies for human recognition, it can be utilized to develop advanced video monitoring and analysis systems for smart construction sites, smart cities, smart finance, smart transportation, public safety, manufacturing, and smart ports.

Through real-time AI video analytics, BRC AX Cube enhances operational efficiency and supports data-driven decision-making, contributing to the creation of future-oriented smart environments.

BRC AX Cube

Cost-effective
User-friendly
Advanced Security
Diverse and Accuracy

Comprehensive Risk Detection

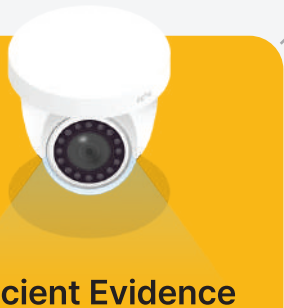
Equipped with over **20 powerful AI algorithms**, **it accurately detects critical life-threatening patterns** such as fire, smoke, weapon possession, falls, and trespassing within the golden time and triggers immediate alerts.

Top-Level Independent Security Environment

As an on-device AI system, it allows complete implementation and operation of intelligent video surveillance without the need for an external network (Internet) connection. **Optimized for environments where network separation is essential**, it fundamentally blocks any risk of data leakage.

Camera-Specific AI Customization

AI algorithms can be selectively activated for each CCTV channel based on the monitoring purpose of each area (for example, “intrusion” for entryways or “illegal parking” for parking lots).
This approach minimizes system load and maximizes monitoring efficiency.



Efficient Evidence Collection and Data Storage

When an event is detected, the system immediately **records key snapshots of the situation and selectively stores only the footage captured before and after the event** instead of saving unnecessary large video files. This ensures quick acquisition of essential digital evidence without wasting storage space or management costs.

Flexible Alert Notifications

For optimal monitoring system operation, alerts can be integrated through the operator’s preferred method, **such as messenger, internal intranet, or SMS**. This enables real-time awareness of incidents and immediate response to critical situations.

Evolving with User-Driven Accuracy

The AI continuously learns from monitoring records that operators classify as “false alarms,” **providing ustomized accuracy over time**. As it adapts to the actual site environment, it significantly reduces unnecessary false detections.

User-Friendly Autonomous Configuration

Through an intuitive UX/UI design, even non-experts can easily control and configure the system without complex technical knowledge. Operators can directly adjust key parameters such as **algorithm analysis time and detection sensitivity** to instantly build a monitoring system optimized for on-site conditions.

In the Era of Generative AI, On-Device Systems Are Essential

Fast Service Delivery

- Since AI runs directly on the device, it is unaffected by network delays or server overload, ensuring rapid response times and seamless service without latency.

Enhanced Data Security

- As user data is processed locally on personal devices, the risk of data leakage is minimized.
- It strengthens data security by transmitting only the necessary data to data centers or filtering out sensitive information in advance according to the situation.

Flexible Operating Environment

- Unlike cloud-based AI that requires an Internet connection, on-device AI operates solely within the device, allowing real-time tasks such as translation even in offline environments.

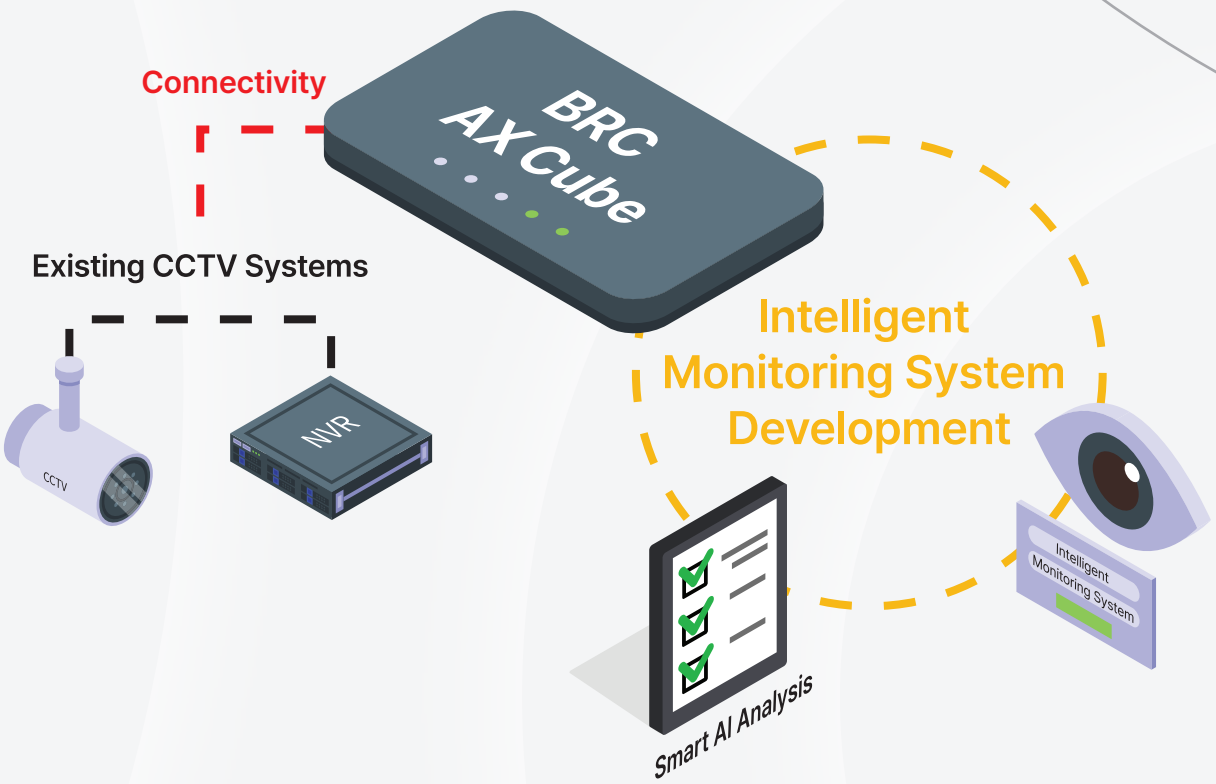
Reduced Data Center Costs and Energy Consumption

- The cost per query in data centers is about ten times higher than that of Internet searches.
- By greatly reducing the data processing burden on data centers, it effectively lowers operating costs and energy usage.

Personalized AI Performance

- Since AI functions directly on user devices such as smartphones or tablets, it inherently understands the operating environment of each device, enabling more accurate and personalized decisions and outputs for the user.

Use Your Existing Equipment Enhanced Security and Performance



Cloud-Based Video Monitoring Systems	Standard AI CCTV	**BRC AX Cube** Multiple CCTV video streams are processed in real time by the AI Vision Box itself (On-Device AI).
Video analysis and AI processing are performed on a cloud server.	AI Functionality Built Directly into the Camera	

Over 20 AI Algorithms

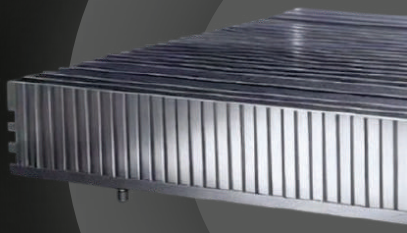
Select the algorithms you wish to analyze and apply. More than 20 types of video analysis services have been fully implemented.

Vehicle exit detection

Fall or collapse detection

Overcrowding or under-occupancy detection

Vehicle parking and stopping detection



Weapon possession detection

Blacklist/whitelist recognition

Smoking detection

Fight detection

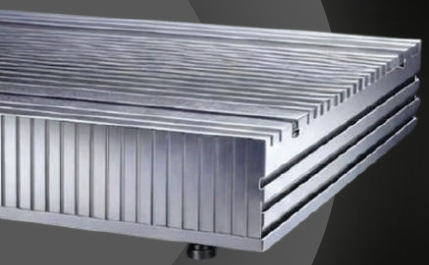
Phone call detection

Drowsiness detection

Rapid movement detection

People counting

Safety helmet,gloves,mask, and protective clothing detection



Fire and smoke detection

Intrusion and loitering detection

Gate or fence climbing detection

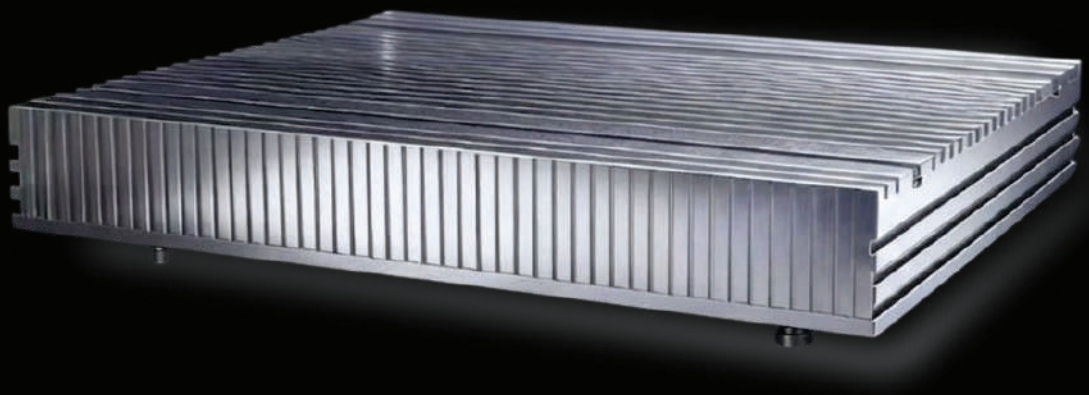
Absence or departure detection

Phone call detection

Road flooding detection

BRC
AX Cube

BRC AX Cube is a video analysis and monitoring system that develops core AI video analysis technologies capable of creating value across various industries through machine learning and deep learning based on big data.
With a wide range of AI algorithm types offering high recognition accuracy, it can be applied flexibly to multiple fields and use cases.



System Specifications

Main Processor	High-performance embedded microprocessor
Processor Model	AX630
NPU (AI Processing erformance)	28.8 TOPS @ INT4
Maximum Display Output	4K @ 60fps
Operating System (OS)	Embedded Linux
RAM	4GB
Storage	32GB eMMC
Typical Power Consumption	Under 3W

Interface

Network	1 WAN port, 1 LAN port
Audio Input	One 3.5 mm port
Audio Output	One 3.5 mm port
RS232	1 port
RS485	1 port
HDMI Port	1 port
USB Port	2 ports
Reset Button	1 button

Supported Devices

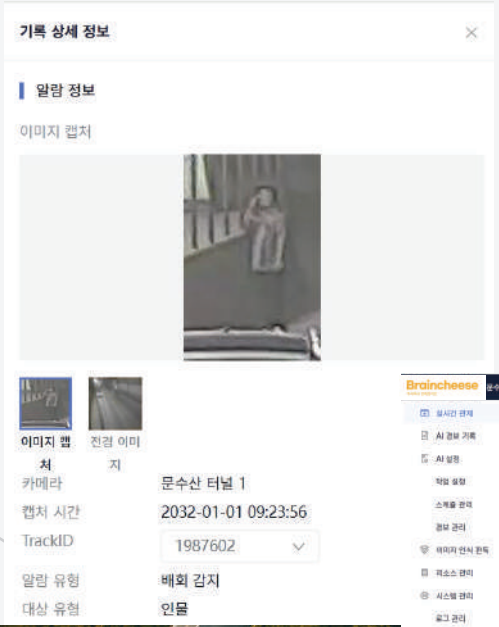
Video Decoding (Codec)	H.264 / H.265, supports up to 8MP IPC
Multi-channel Decoding	Supports up to 20 channels of 1080p @ 30fps simultaneously
Video Channels	16 channels / 8 channels
Video Processing Capability	28.8T AI computing, 16-channel AI video stream

System Specifications

Network Protocols	TCP / UDP / HTTP / HTTPS / MULTICAST / DHCP / FTP / NTP / RTSP
Dual Network Mode	Supports three modes: “Multi-IP,” “Load Balancing,” and “Redundancy Mode”
Operating Environment	Operates normally in temperatures from -20°C to +60°C
Power Supply	DC12V ±10%, 2A
Material	Aluminum alloy body with built-in heat dissipation
Dimensions	229 × 193 × 49 mm
Weight	Less than 1 kg

Versatile Applications Across Various Environments

Tunnel and Underpass Installation Case



Areas Vulnerable to Fire and Flooding

Minimize human and property damage by detecting fires and floods early in vulnerable areas, such as tunnels and underpasses, to prevent major accidents.

- 24/7 real-time video monitoring and AI-based automatic detection of abnormal signs
- Smoke/flame detection inside tunnels, and real-time water level detection in flooded areas
- Sends instant notifications to designated managers and relevant organizations when abnormal situations occur.

Local Governments and Public Institutions

Enables efficient management of crime prevention, illegal parking, and littering enforcement.

- Controls access for unregistered individuals and detects illegal border intrusions.
- Triggers alerts when people appear in restricted areas or at inappropriate times or locations.
- Detects and alerts on weapon possession or fighting behavior in real time.
- Detects and alerts on falls or collapses.
- Issues alerts when overcrowding occurs in confined areas.
- Collects evidence for illegal parking enforcement using vehicle license plate and type recognition technology.

Installation at Educational Institution Case

Educational Institutions

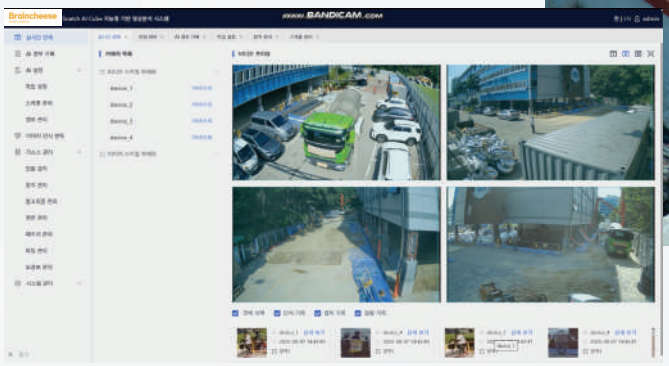
Enhances safety through real-time monitoring, providing students, parents, and faculty with peace of mind and effective crime prevention.

- Detects and alerts in cases of unauthorized entry or weapon possession by unregistered individuals.
- Identifies rapid movements in high-risk areas such as stairways.
- Issues alerts when teachers or security personnel are absent from designated locations.

Other Applications

A monitoring system suitable not only for industrial sites but also for commercial use.

- Predicts potential fire outbreaks and spread in remote or mountainous areas to prevent accidents.
- Sends alerts when no personnel are present in guard posts, restricted zones, or workspaces.
- Detects whether required uniforms or safety gear (e.g., sanitary caps, helmets, gloves) are worn and issues alerts when missing.
- Sends timely notifications upon VIP entry and provides statistical data on total visitor numbers within designated areas.



Construction Site Installation Case

Efficient and Smart Intelligent CCTV Monitoring System

BRC AX Cube Q&A

How is it different from regular CCTV?

While standard CCTV systems only record footage, our product automatically detects abnormal behaviors or dangerous situations from video feeds and sends instant alerts. For example, it can detect incidents such as falls, intrusions, or early signs of fire in advance, enabling real preventive action and rapid response.

How are alerts received?

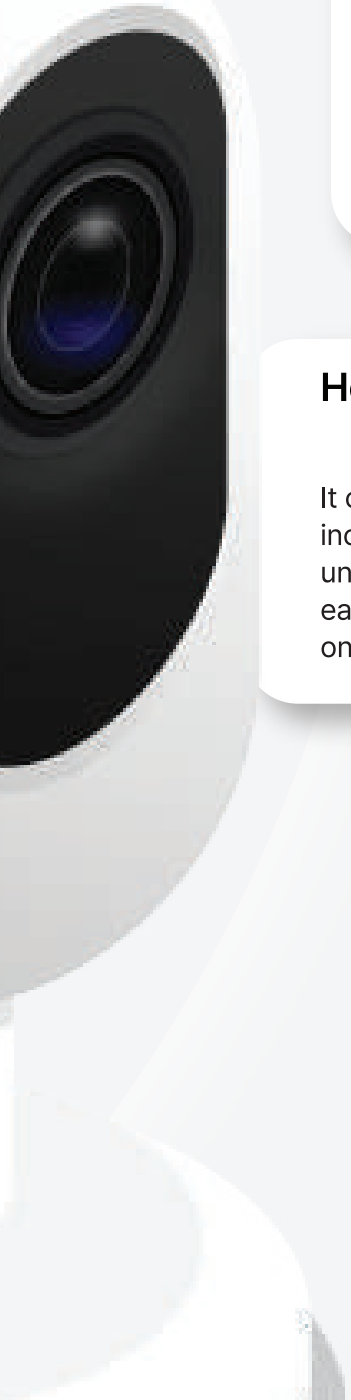
Alerts can be received directly through the monitoring system, and also via messengers such as KakaoTalk for convenient real-time notifications.

It uses AI, does that make it complicated?

Not at all. The system features an intuitive smartphone-like interface, and AI analysis results are automatically organized and displayed clearly. You can also easily customize the system to set your preferred alert conditions and notification methods.

Is it better than cloud-based CCTV?

Yes. Cloud-based CCTV transmits footage externally, which raises concerns about security and personal data leakage. Our on-device system processes all analysis internally, ensuring faster and more stable monitoring without any risk of video exposure. It also operates even without an Internet connection, so surveillance continues seamlessly even during network outages.



Does it require high maintenance or electricity costs?

Not at all. It uses a next-generation NPU that consumes 30–50% less power than conventional GPUs, significantly reducing electricity costs. Since no external data transmission occurs, communication fees are minimal, and there are no additional cloud service charges.

How intelligent is it? What can it detect?

It can detect over 40 types of abnormal behaviors and hazardous situations, including facial recognition, dangerous actions (intrusion, fighting), lack of uniform or safety gear, vehicle license plate and type recognition, smoke or early fire signs, intrusion, and departure. You can also choose and purchase only the detection functions you need.

Do I need to replace all my existing CCTV equipment?

No. You can retain your current CCTV cameras and storage devices while simply adding our system to enable intelligent monitoring features. With minimal cost and no major installation work, you can easily upgrade to a smart surveillance system by integrating BRC AX Cube.

BRC

AX Cube

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