

# **Wiz Sense**

Focus on human and vehicle

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# Overview

According to relevant academic reports, people watching a single video monitor for more than twenty minutes lose 95% of their ability to maintain focus and attention that are needed to discern significant events. In addition, the security industry reports show that over 98% of generated alarms are false. Limitations in the ability of humans to vigilantly monitor video surveillance's live footage paved way to the demand for artificial intelligence that could efficiently perform such task.

To solve these problems, Dahua released WizSense to ensure your personal safety and property. Let's see how WizSense works!

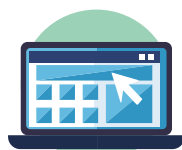
## What is WizSense

Launched by Dahua Technology, WizSense is a series of wide range AI products and solutions that adopt independent AI chip and deep learning algorithm. It can recognize human and vehicle in an image with high accuracy, enabling users to focus on real targets. Based on Dahua's advanced technology, WizSense makes your video intelligent, simple and inclusive.

The logo for WizSense, featuring the word "Wiz" in white on a red background and "Sense" in black.

### Intelligent

Powered by AI chip and deep learning algorithm, WizSense provides various features that realizes accurate alarms for human and vehicle, and quick target search, maximizing resources to increase overall efficiency.



### Simple

WizSense offers simple configuration, especially for SMD Plus and AI Coding enabled by default. It eases your customer's daily job and also empowers them to make better business decisions.



### Inclusive

Inclusivity of WizSense is the idea that everyone gets the opportunities and benefits from AI. With affordable prices and easy configuration of Dahua WizSense, AI is no longer confined to an ivory tower, but applied to real scenarios instead.

Empowered by deep learning, WizSense provides full protection for customers' property and improves working efficiency before, during and after an event happens.

## | User Benefits



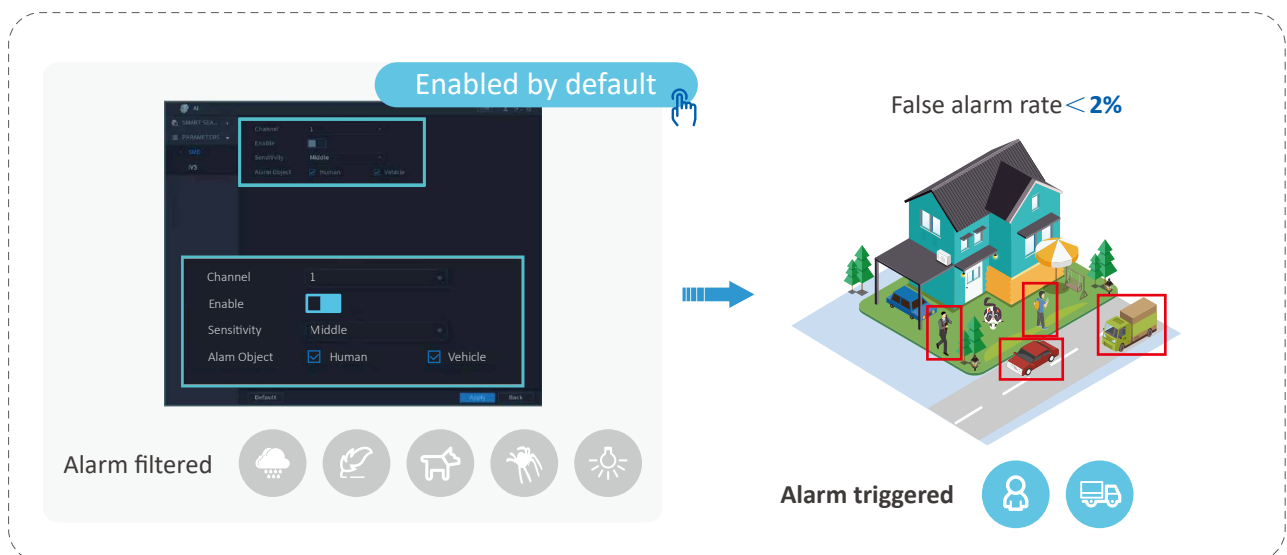
### • Accurate Prediction before Events

Different from the traditional CCTV system, WizSense can effectively transfer "post-evidence" to "pre-warning" through accurate prediction before events.

WizSense technology includes SMD Plus, Perimeter Protection, and Face Recognition that can extract human and vehicle information from massive data, significantly reducing false alarms caused by non-target objects.

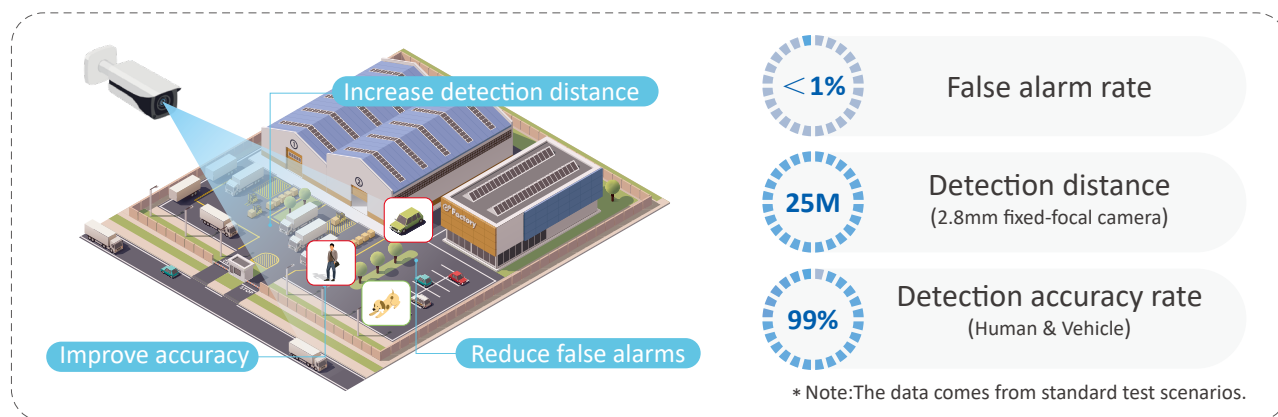
#### SMD Plus

SMD Plus analyzes human and vehicle shapes based on motion detection through adoption of deep learning algorithm, allowing users to focus on real threats.



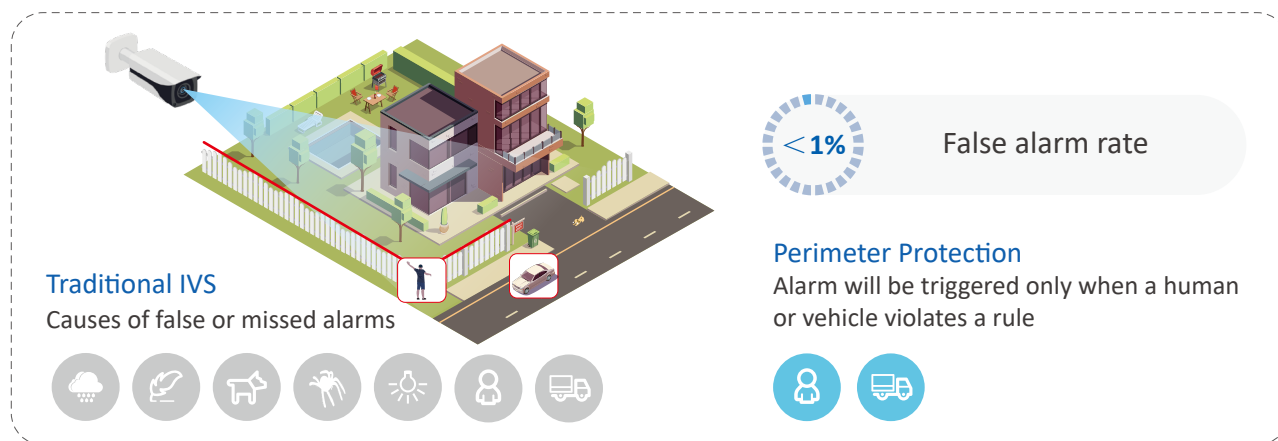
## SMD 3.0

The original SMD Plus occasionally generates false alarms caused by animals such as dogs and cats. In addition, the detection distance is not long enough, which limits the detection range for targets. The IPC camera continues to upgrade the value of AI with the release of SMD3.0.



## Perimeter Protection

The perimeter protection – based on tripwire and area intrusion – sends an alarm only when unwanted movements triggered by human or vehicle occur, saving users from unnecessary actions caused by false alarms.



## Difference between Perimeter Protection and SMD (including SMD Plus and SMD 3.0):

	Perimeter Protection	SMD
Supported channels (For back-end intelligence)	Several channels	Up to Full channels
Configuration	Draw tripwire or intrusion rules	Enabled by default
Application Scenario	Applicable to specific area, especially where needs to detect direction	Whole scene by default

## Face Detection

After identifying a human-type intrusion, WizSense helps users recognize human attributes via face recognition.

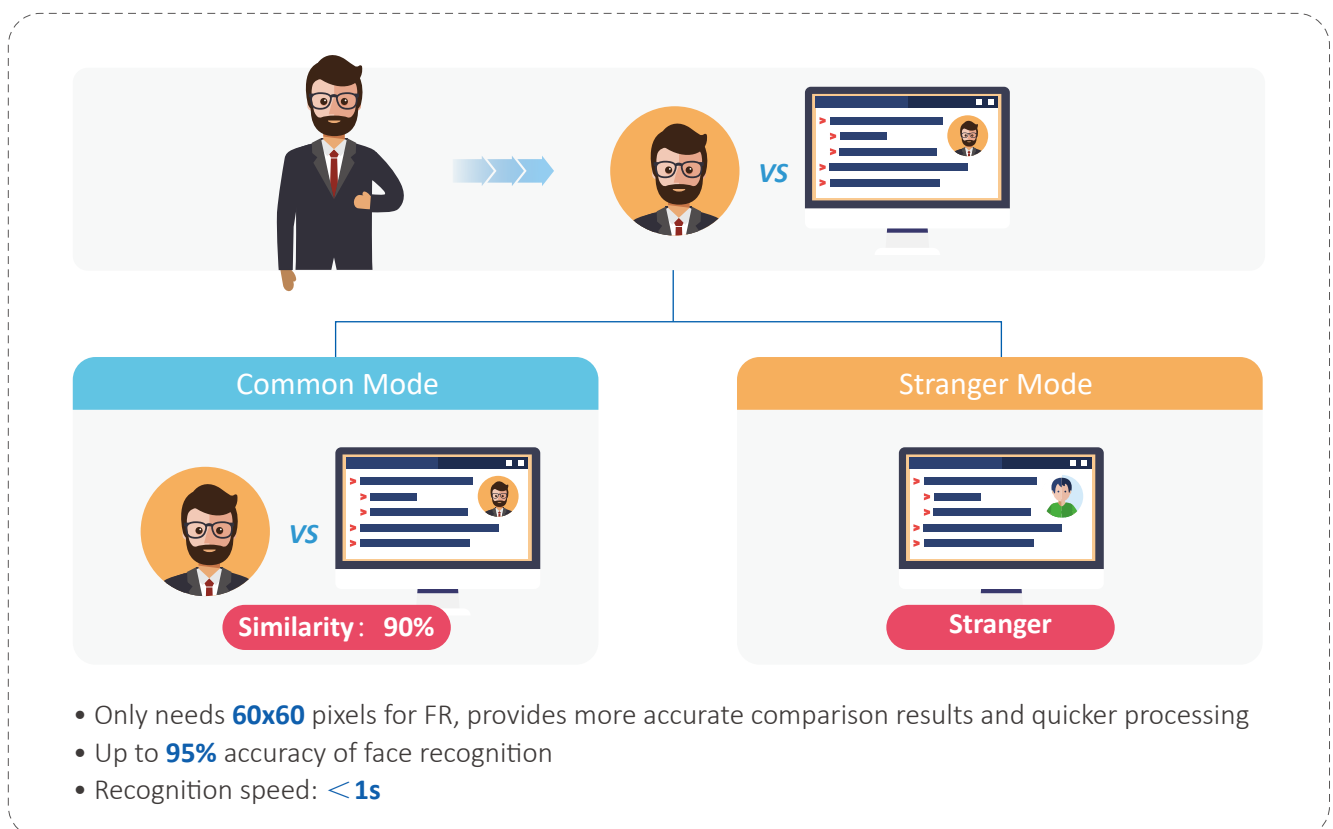


Face Attributes	
Gender	Female, Male
Age	Age value, Infant/Child/Young/Middle-aged/Elderly, Ten years for a period
Expression	Angry, Disgusted, Fear, Happy, Sad, Confused, Surprised, Calm
Glasses	Yes (Regular Glasses, Black Frame Glasses, Sunglasses, Others), No
Moustache/Beard	Yes (Beard, Moustache, Others), No
Mouth Mask	Yes, No

- Only needs **30x30 pixels** for FD, provides more accurate detection results and quicker processing
- Up to **98% accuracy** of face detection
- Supports up to **12 pics** of face attributes detection for single channel
- Supports up to **6 kinds** of face attributes

## Face Recognition

By comparing detected face image with a customized face database, users can gain more business value through VIP recognition, blocklist alarm, stranger alarm, etc.





- **Instant Response & Active Deterrence during an Event**

### Active Deterrence

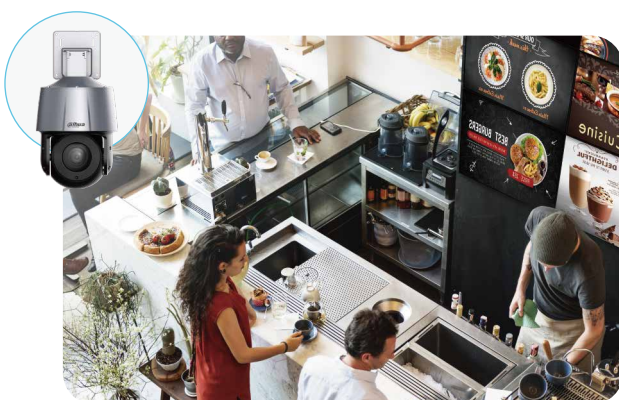
Actively warns off intruders once they have been detected to significantly reduce the probability of any incident to happen.

Alerts users with a real-time push notification that shows trigger type (human or vehicle), and enables users to easily verify alarms through captured videos.



### Time Sharing Monitoring

The built-in light and speaker of the SD3A series PTZ camera has two uses: during day time, the PTZ camera actively monitors the main area; at night time, the PTZ camera turns to the entrance area. When the alarm is triggered, it will warn off intruders through its Active Deterrence function. Everything works based on time tasks.



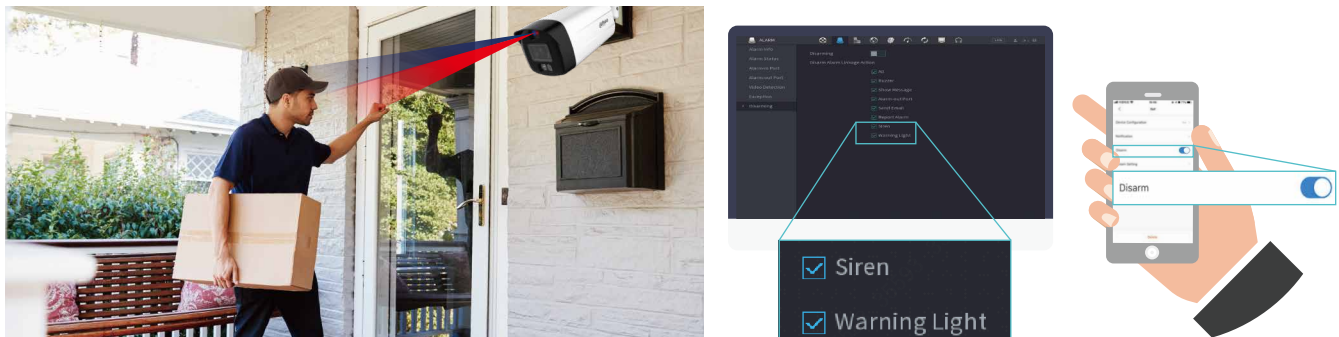
## Two-way Talk& Customizable Alert Voice Audio

Ten-second custom voice audios can be recorded on mobile app, which can be used as greetings, reminders, etc. The camera also supports Two-way talk.



## One Click Arming & Disarming

Newly-added disarm option for siren and warning light of the camera. Also, it can be achieved on DMSS which brings convenience for end-users.



## Quick Target Search after an Event

01 SMD

**98%**

Up to 98% enhancement of searching efficiency

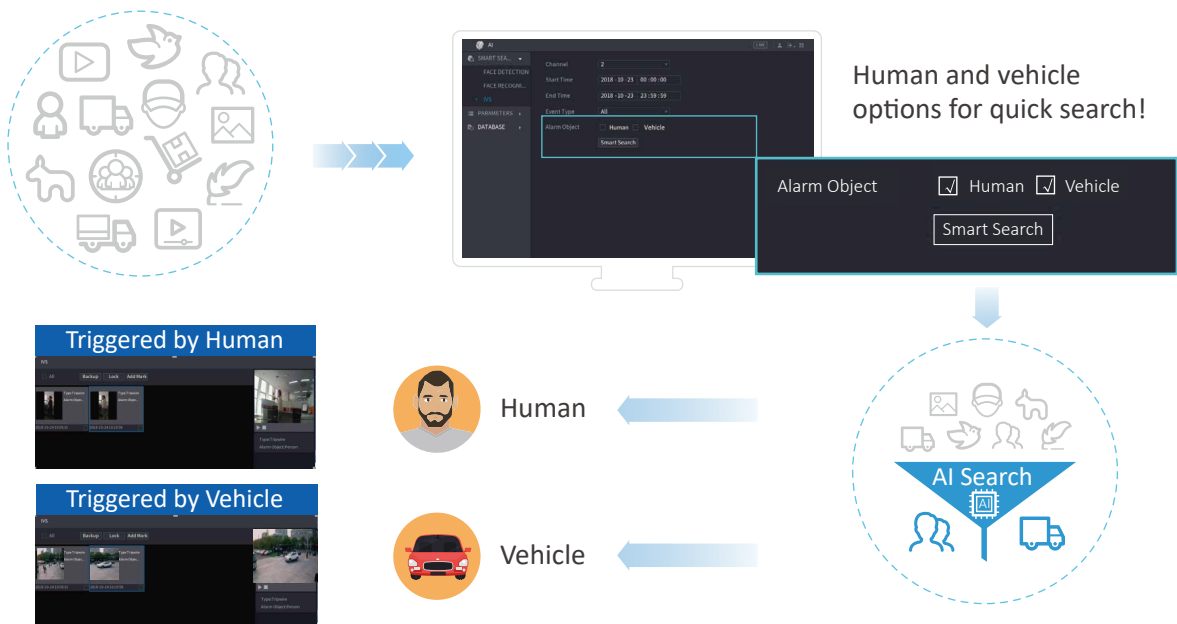
Step1:  
Choose Human / Vehicle target type

Step2:  
Display target video, significantly saving searching time.

06

02

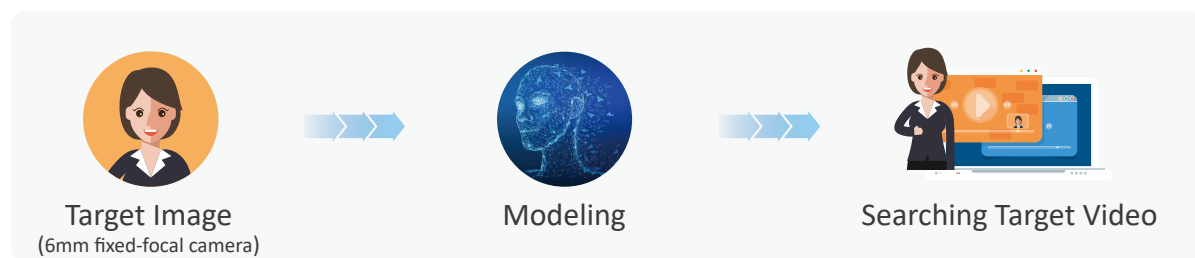
## Perimeter Protection



03

## Face Search

Find out when and where a person of interest has appeared in monitored scenes by image search.



Effectively reduce the search scope through face attribute search.



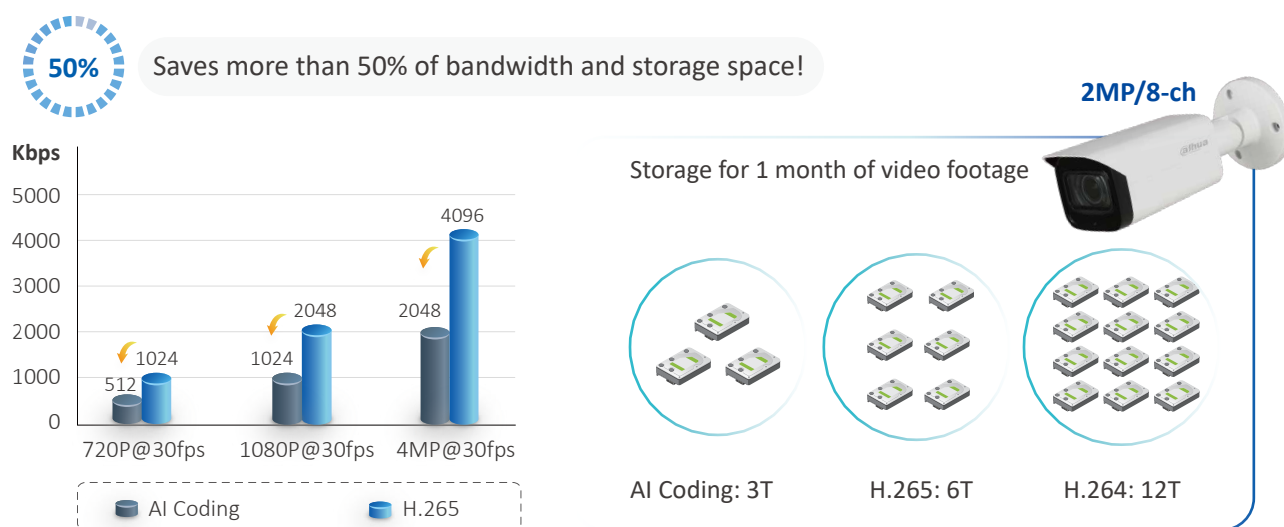
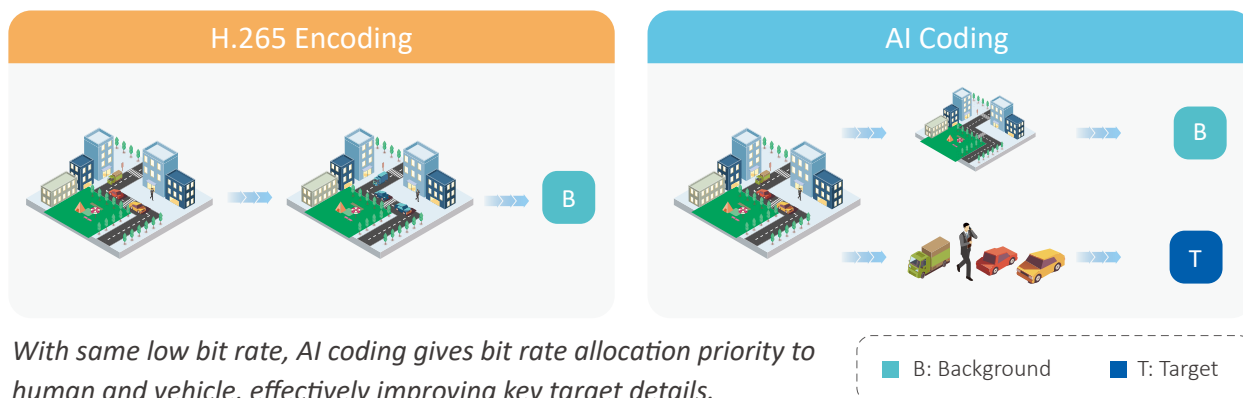


## • Storage Saving while Ensuring the Image Quality of Target

### AI Coding

With the improvement of monitoring resolution, how to maintain image quality while saving storage cost has become one of the most concerning problems of users. Based on CBR (Constant Bit Rate), WizSense AI Coding dynamically allocate bit rate, providing clear target images while saving more than 50% bit rate compared with H.265.

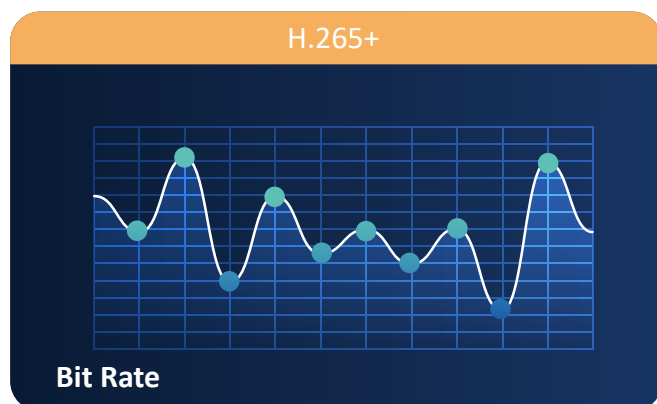
AI Coding function is enabled by default in the newest firmware version.



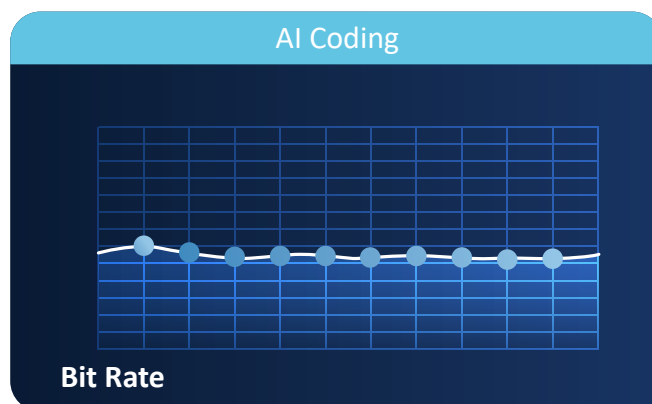
Through CBR (Constant Bit Rate), AI Coding does not lose its decoding compatibility when integrated with 3rd party players or platforms.



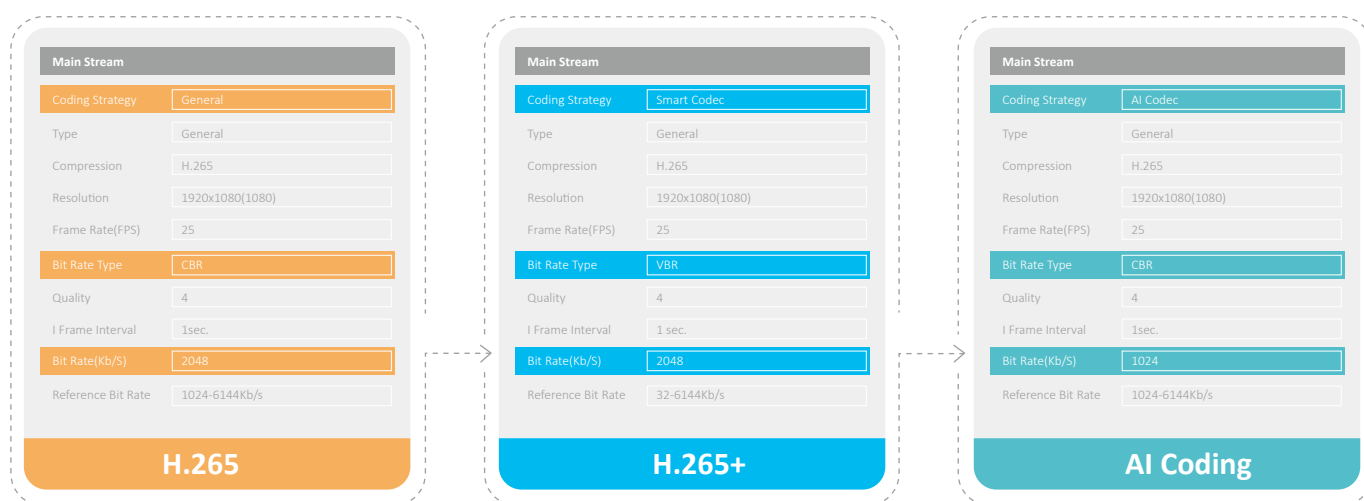
Through CBR (Constant Bit Rate), AI Coding does not lose its decoding compatibility when integrated with 3rd party players or platforms.



VBR (Variable Bit Rate) has high burstiness, which makes it difficult to calculate the required bandwidth.



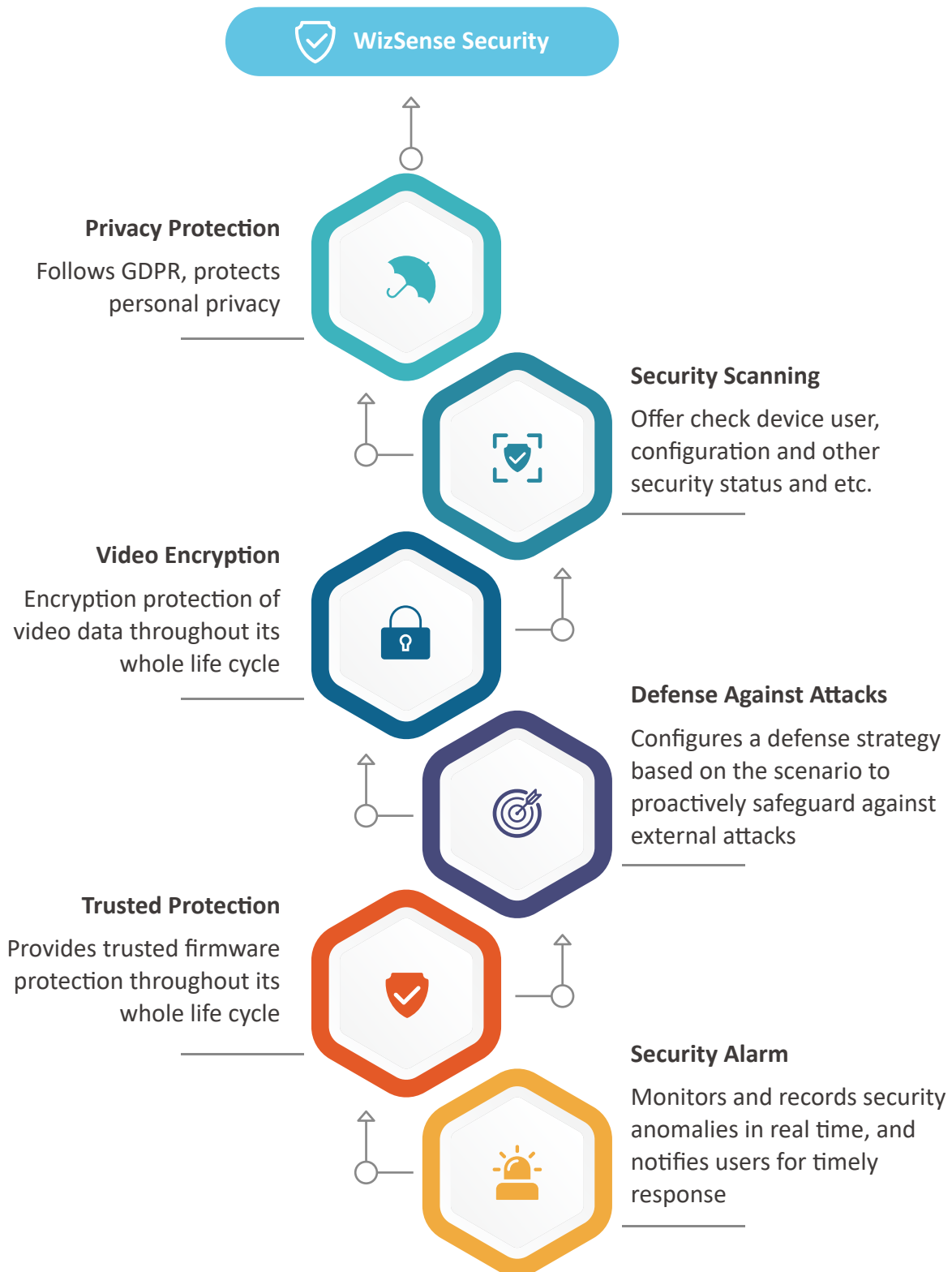
Makes it easy to deploy bandwidth and improves bandwidth utilization.



	H.265	H.265+	AI Coding
Mode	CBR	VBR	CBR
Default Bit Rate (Kbps)	720P@30fps: 1024 1080P@30fps: 2048 4MP@30fps: 4096	720P@30fps: 1024 1080P@30fps: 2048 4MP@30fps: 4096	720P@30fps: 512 1080P@30fps: 1024 4MP@30fps: 2048
Advantages	Standard encoding method	Higher compression rate especially in wide area scenarios and static scenarios monitoring	Compared with VBR, CBR encoding method provides better stability and better compatibility with 3rd party platform. Saves 50% bandwidth and storage costs compared with standard H.265.

The abovementioned bit rate is based on XVR settings. In the analog system, the preview video is the original bit stream. The IP system video also needs to be encoded and decoded. Thus, the default bit rate of IPC only achieves 75% compared to H.265, ensuring excellent image quality.

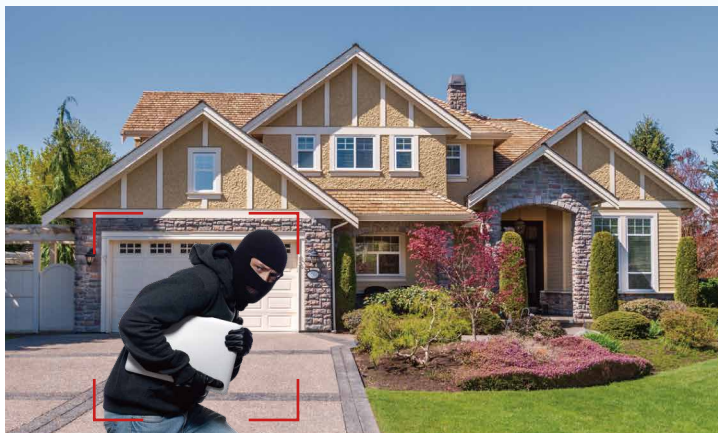
- Protects Network Security and Prevents Privacy Disclosure



## Application Scenarios

### Villa's Yard

WizSense effectively protects your property when you are away from home.



SMD



Perimeter Protection



Push Notification



Visual and Auditory Warning

#### Requirements

Have you ever received tons of false alarm notifications while you were away from home? Have you ever received an intrusion detection alarm, but unable to obtain the appearance of suspects? Let WizSense shield your home!

#### False Alarm Reduction

False alarm rate less than 1%, enables you enjoy your perfect vacation without worrying about your home's security.

#### Notification Prompt via Smartphone

You will receive a mobile push notification when the alarm has been triggered.

#### Light and Sound Intruder Deterrence

The powerful visual and auditory warning can warn off intruders as soon as they are detected, protecting your properties at all times.

### Luxury Shop's Entrance

Creates business value while enhancing security.



Face Recognition



Push Notification

#### Requirements

With a large trading volume everyday, luxury shops are constantly exposed to security threats. In addition, improving VIP customer experience and management efficiency has emerged as a major demand.

#### Assists VIP Service

WizSense can accurately identify VIP customers and push notifications to the shop manager via APP, improving management efficiency to enhance users' satisfaction.

#### Secures Shops

Once a person with previous criminal has been detected in our system, the WizSense products will quickly target him/her, and at the same time send an alarm to the security center.

## Establishment's Monitoring Center

Improves the efficiency of monitoring center's security guard.



SMD



Quick target search

### Requirements

With limited manpower that can focus on huge amount of details, 24/7 monitoring has been a pressing challenge to security guards.

### Accurate Alarm

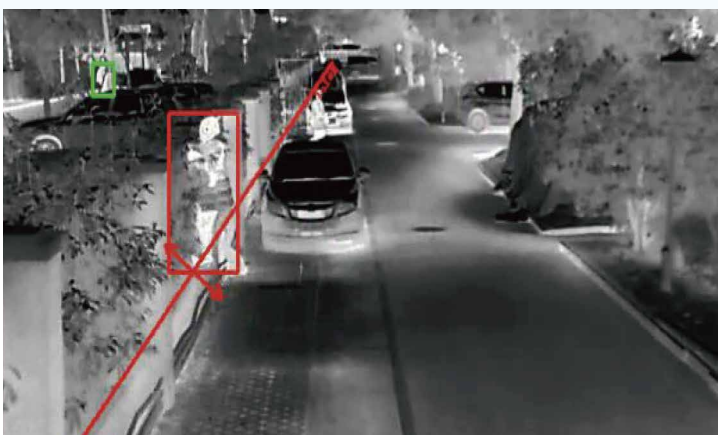
Wizsense filters out useless alarms caused by leaves, light, pets etc., saving users' time and effort.

### Efficient Search

WizSense extracts and classifies humans and vehicles from massive video data, making it easy for end users to trace and analyze information. The human and vehicle options for video playback speeds up the target search and saves retrieval time.

## Industrial Park Perimeter

Keeps people away from exclusion areas with flexible configuration.



Perimeter Protection



Visual and Auditory Warning



Thermal Imaging

### Requirements

It is required to protect the perimeter security of the industrial park with accurate alarm.

### Strong Adaptability

The thermal camera converts the thermal radiation into the visible image, which can be clearly imaged in the harsh environment, such as no-light, backlight, haze and so on.

### Flexible Rules for Monitoring Area

Flexible rules can be set up depending on the structure of the fencing in order to prevent people from climbing over it.

### Sound and Light Alert on Site

Once perimeter protection alarms are triggered, built-in LED and loudspeaker are activated to alert the intruder and avoid delays caused by central processing.



## Fish Farm

Safeguard your outdoor properties and reduce labor costs.



SMD



Perimeter Protection



Customizable Alert VoiceAudio



Visual and Auditory Warning

### Requirements

Help protect fish farms against thieves, poisoners or anglers without permission.

### Wide Monitoring Area

The Active Deterrence PTZ camera can rotate horizontally and vertically to monitor different areas of the fish farm through preset position, bringing less labor costs and better scenario adaptability.

### Sound and Light Alert on Site

When perimeter protection or SMD alarms are triggered, its built-in light will flash and its speaker will play a recorded voice audio to warn off intruders. Example: "Attention! Swimming and fishing are not allowed here! Please leave the premises immediately."

## Convenience Store

Time-sharing monitoring to protect your shop 24/7.



SMD



Time-sharing Monitoring



Push Notification



Visual and Auditory Warning

### Requirements

Monitor the cashier area during business hours, and the entrance during non-business hours using Active Deterrence PTZ Camera.

### Time-sharing Monitoring

Supports presetting of camera position at cashier and shelves area during day time, preventing intruders and burglars from trespassing.

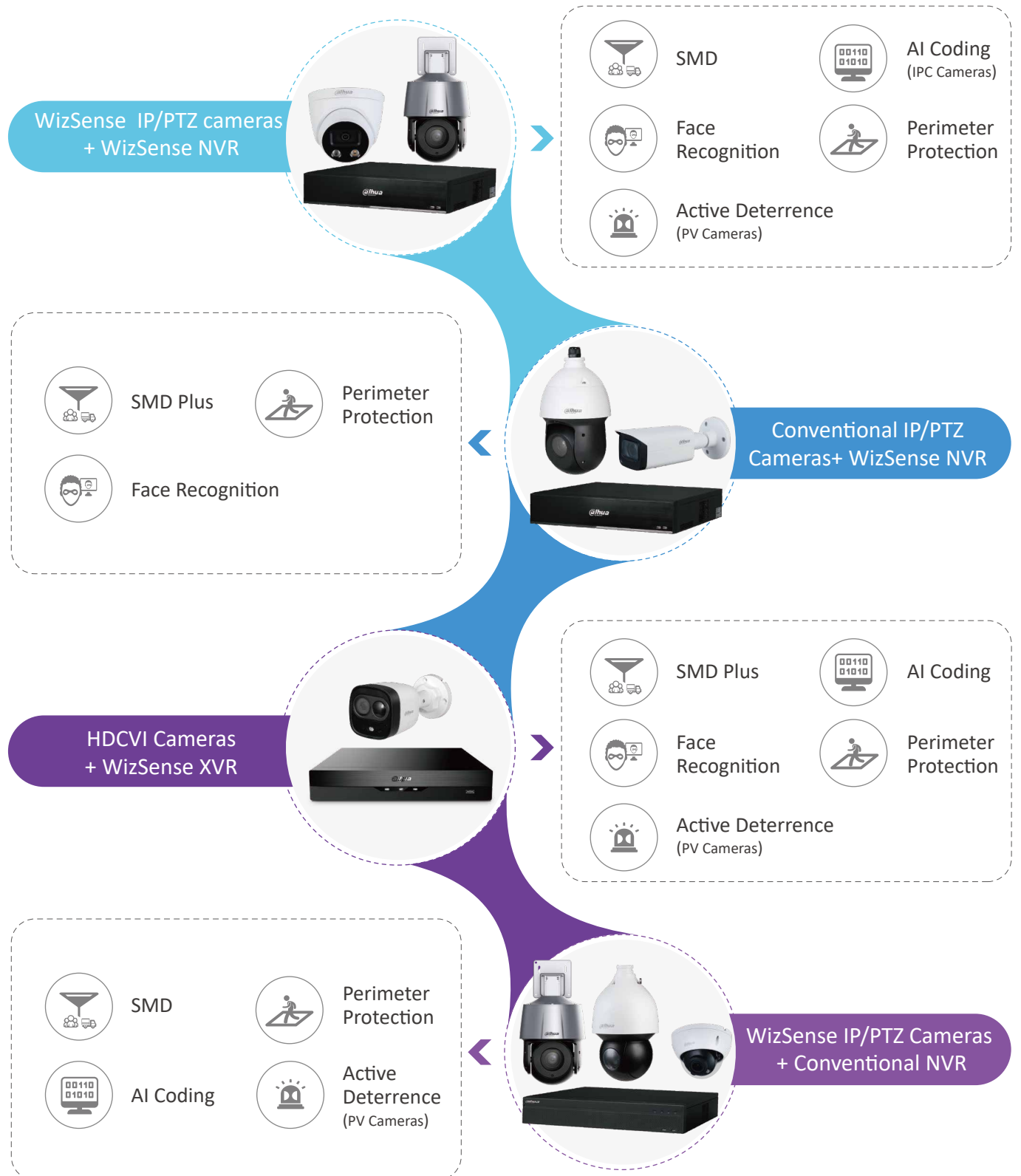
### Sound and Light Alert on Site

During closing time, the camera will rotate to monitor the entrance automatically. When the alarm is triggered, the camera's built-in light and speaker will turn on to warn off intruders.

### Work with DMSS App

Through the DMSS App, the camera can send push notifications to the user's mobile phone. In addition, users can also watch live video footages, capture images and set configurations using the app.

## Solutions & Products



## WizSense IPC



*SMD 3.0/AI Coding will be supported by new FW (2021.04)*

### IPC 3 Series (2M/4M/5M/8M)



- SMD 3.0, AI Coding, Perimeter Protection
- Starlight
- Smart H.264+/H.265+ triple-stream encoding
- WDR, 3D DNR, HLC, BLC
- Micro SD card, IP67, POE



*SMD 3.0/AI Coding will be supported by new FW (2021.03)*

### IPC 3 PV Series (2M/4M/5M/8M)



- SMD 3.0, AI Coding, Perimeter Protection
- Build-in Mic & Speaker
- Smart H.264+/H.265+ triple-stream encoding
- Red and blue flashlight alarm
- WDR, 3D DNR, HLC, BLC
- Micro SD card, IP67, POE

## WizSense PTZ

### PTZ SD49 Series (2M/4M)



- SMD 3.0, Perimeter Protection, Face Detection
- IR distance up to 100m, Starlight
- Powerful 25x optical zoom
- Smart H.264+/H.265+, triple-stream encoding
- WDR, 3D DNR, HLC, BLC
- IP66, POE+
- 4G(only for SD49425XB-HNR-G)

### PTZ SD5A Series (2M/4M)



- SMD 3.0, Perimeter Protection, Face Detection
- Auto tracking
- IR distance up to 150m, Starlight+
- Powerful 45x optical zoom
- Smart H.264+/H.265+, triple-stream encoding
- WDR, 3D DNR, HLC, BLC
- IP67, IK10, POE+

**PTZ SD3A Series**

(2M/4M)



- SMD 3.0, Perimeter Protection
- IR distance up to 30m, Starlight
- 4mm fixed lens/ 5x optical zoom
- Smart H.264+/H.265+, triple-stream encoding
- Built-in Mic & Speaker
- Built-in spotlight
- IP66, PoE
- WiFi (only for SD3A200-GNR-W-PV)

**PTZ SD6C Series**

(4M)



- SMD 3.0, Perimeter Protection, Face Detection
- Auto tracking
- IR distance up to 150m, Starlight+
- Powerful 32x optical zoom
- Smart H.264+/H.265+, triple-stream encoding
- Built-in Mic & Speaker
- Built-in spotlight
- WDR, 3D DNR, HLC, BLC
- IP67, IK10, POE+

**WizSense Thermal****Thermal BF1241 Series**

- Fire detection & alarm, Smoking detection
- Smart alarm linkage with strobe light & audio, perimeter protection
- 256x192 Vox uncooled thermal sensor technology
- Athermalized Lens (thermal), focus-free
- 1/2.8" 4Megapixel progressive scan CMOS
- Image fusion
- Micro SD memory, IP67, PoE

**Thermal DF1241 Series**

- Fire detection & alarm, Smoking detection
- Smart alarm linkage with strobe light & audio, perimeter protection
- 256x192 VOx uncooled thermal sensor technology
- Athermalized Lens (thermal), focus-free
- 1/2.8" 4Megapixel progressive scan CMOS
- Image fusion
- Micro SD memory, IP66, PoE

**WizSense NVR****NVR2000 AI Series**

- Up to 1 channel video stream Face Recognition
- Up to 1 channel Perimeter Protection
- Up to 2 channel SMD Plus
- H.265/H.264 codec decoding
- Max 144Mbps incoming/outgoing bandwidth

## WizSense XVR

### Cooper-I Series



#### XVR1B-I Series

- Up to All channel SMD Plus
- Up to All channel AI Coding
- Up to all channel 1080P / 720P camera input
- Support all channel 1080N / 720P@15fps encoding

#### XVR1BH-I Series

- Up to All channel SMD Plus
- Up to All channel AI Coding
- Up to all channel 5MP / 4MP / 1080P camera input
- Support all channel 5M-N@10fps / 4M-N@15fps / 1080P@15fps encoding

### XVR4000-I Series (1080N/720P)



- Up to All channel SMD Plus
- Up to All channel AI Coding
- Up to all channel 1080P / 720P camera input
- Support all channel 1080N / 720P@15fps encoding

### XVR5000-I3 Series (5M-N/1080P)



- Up to All channel SMD Plus
- Up to 1 channel video stream Perimeter Protection
- Up to 1 channel video stream Face Recognition
- Up to All channel AI Coding
- Up to all channel 5MP / 4MP / 1080P camera input
- Support all channel 5M-N@10fps / 4M-N@15fps / 1080P@15fps encoding

### XVR5000-4KL-I3 Series (5MP)



- Up to All channel SMD Plus
- Up to 1 channel video stream Perimeter Protection
- Up to 1 channel video stream Face Recognition
- Up to All channel AI Coding
- Up to all channel 4K camera input and 4K@15fps preview
- Support all channel 4K@7fps encoding



**XVR5000-I2 Series**

(5M-N/1080P)



- Up to All channel SMD Plus
- Up to 2 channel video stream Perimeter Protection
- Up to 2 channel video stream Face Recognition
- Up to all channel 5MP / 4MP / 1080P camera input
- Support all channel 5M-N@10fps / 4M-N@15fps / 1080P@15fps encoding

**XVR5000-4KL-I2 Series**

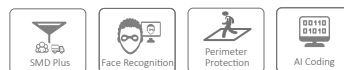
(4K-N/5MP)



- Up to All channel SMD Plus
- Up to 2 channel video stream Perimeter Protection
- Up to 2 channel video stream Face Recognition
- Up to all channel 4K camera input and 4K-N@30fps / 4K@15fps preview
- Support all channel 4K-N@15fps or 4K@7fps encoding

**XVR7000-4K-I2 Series**

(4K)



- Up to All channel SMD Plus
- Up to 2 channel video stream Perimeter Protection
- Up to 2 channel video stream Face Recognition
- Up to all channel 4K camera input and 4K@30fps preview
- Support all channel 4K@15fps encoding

# ENABLING A SAFER SOCIETY AND SMARTER LIVING

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Ver. 2, Nov. 2021

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