![Dahua Technology logo]

Wiz *Sense*

Focus on human and vehicle

Intelligent **Simple** **Inclusive**

Overview

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.

User Benefits

Accurate prediction before an event	Instant deterrence during an event	Quick target search after an event	Storage saving while ensuring target details	Privacy protection and defense against attacks
False alarm rate **＜2%**	Alarm pushing time **＜1s**	Target search efficiency **↑98%**	Bandwidth saving **＞90%**	**TUV** and **UL** certified
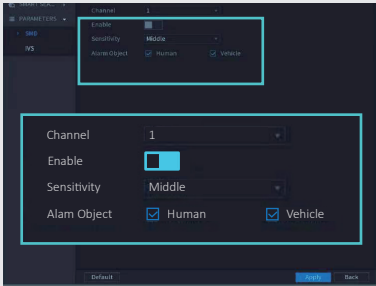
• Accurate Prediction before an Event

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.

One key to enable

Channel	1
Enable	
Sensitivity	Middle
Alam Object	☑ Human ☑ Vehicle

Alarm filtered

False alarm rate＜2%

Alarm triggered

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.

Traditional IVS
Causes of false or missed alarms

Perimeter Protection
Alarm will be triggered only when a human or vehicle violates a rule

False alarm rate＜**2%**

Difference between Perimeter Protection and SMD Plus:

	Perimeter Protection	SMD Plus
Supported channels (For back-end intelligence)	Several channels	Full channels
Configuration	Draw tripwire or intrusion rules	Enable via single button
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.

Gender: Male
Age: Middle-aged
Expression: Happy
Glasses: Off
Moustache: Yes
Mouth Mask: No

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 **30*30 pixels** for FD, provides more accurate detection results and quicker processing
- Up to **98% accuracy** of face detection
- Supports up to **24pics** 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, blacklist alarm, stranger alarm, etc.

Face Recognition for further identification

VS

Common Mode

VS

Similarity： 90%

Stranger Mode

Stranger

- Only needs **60*60 pixels** for FR, provides more accurate comparison results and quicker processing
- Up to **95% accuracy** of face recognition
- Recognition speed: ＜**1s**
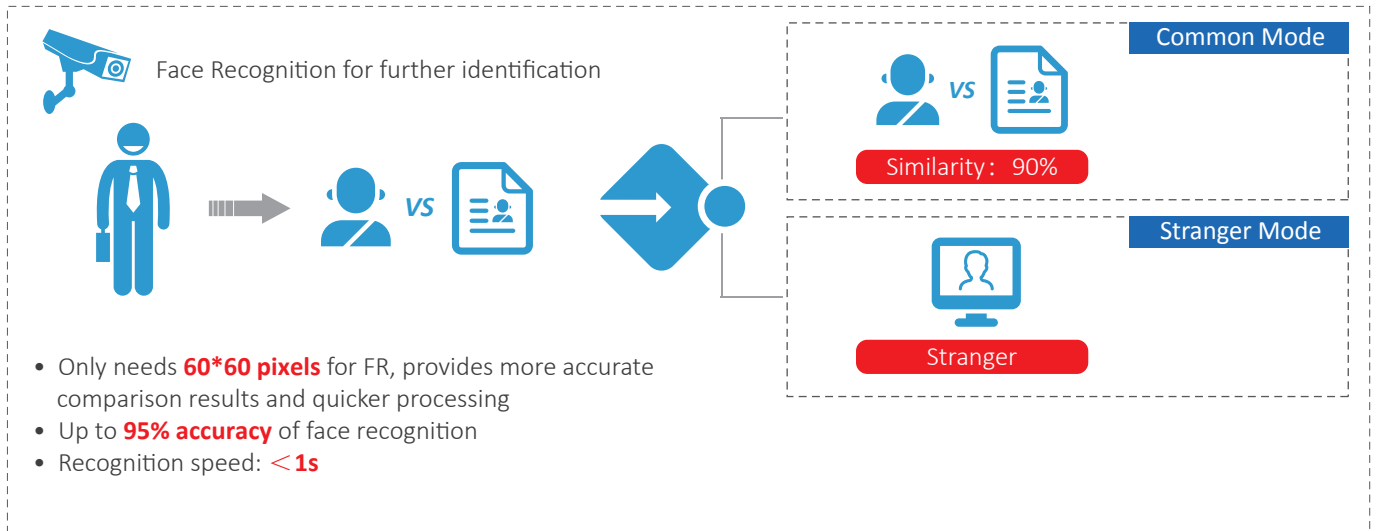
• Instant Response & Active Deterrence during an Event

• 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.

White light

Siren

Motion Detection: Human
leo IPC
07-30 05:44:11

| Video analysis shows there is a human (or vehicle) in the monitored scene | The camera flashes and makes a warning sound to deter the intruder | User receives alert by DMSS instantly |

Alarm pushing time ＜ **1s**

• Quick Target Search after an Event

Quick search powered y WizSense helps users to quickly locate targets through human and vehicle classification, making it easy for end users to trace and analyze information history and saving retrieval time.

SMD Plus

up to 98% enhancement of searching efficiency

Step1：Choose Human/Vehicle target type

☑ Human ☑ Vehicle

Step2: Display target video, significantly saving searching time.

Perimeter Protection

Alarm Object ☑ Human ☑ Vehicle

Smart Search

AI Search

Human

Vehicle

Triggered by Human

Triggered by Vehicle
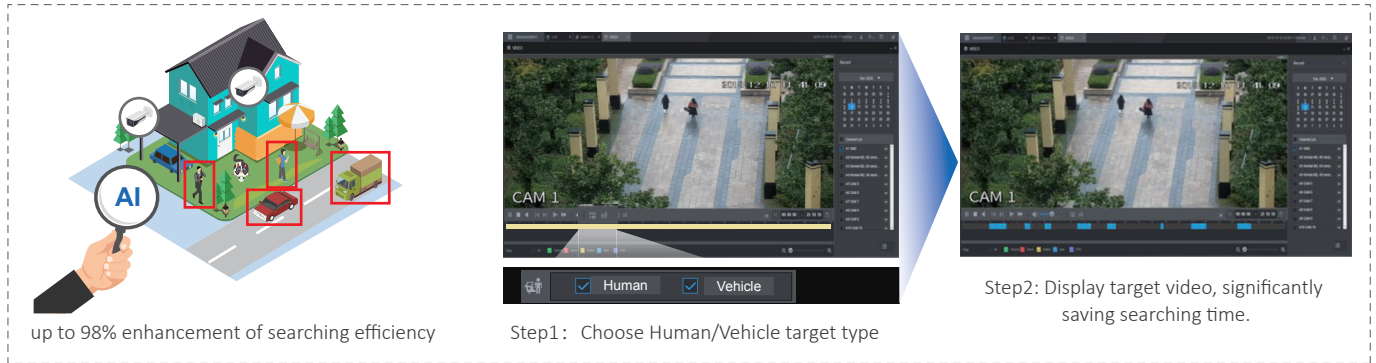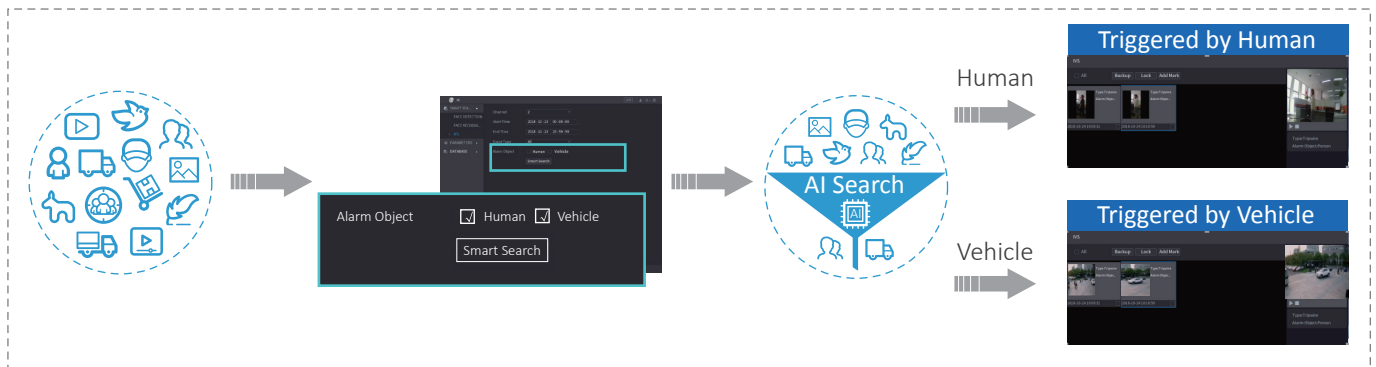
Face Search

Image Search
Find out when and where a person of interest has appeared in monitored scenes.

Target Image
(from database or imported)

Modeling

Searching target video
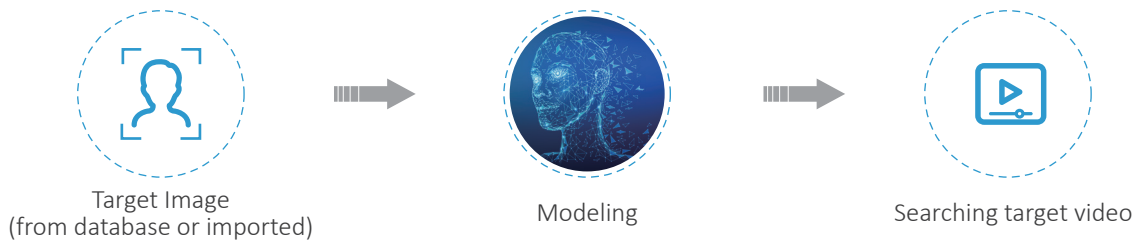
Face Attribute Search
Effectively reduce the search area.

Start Time

End Time

Gender

Age

Glasses

Beard

Mask

Similarity
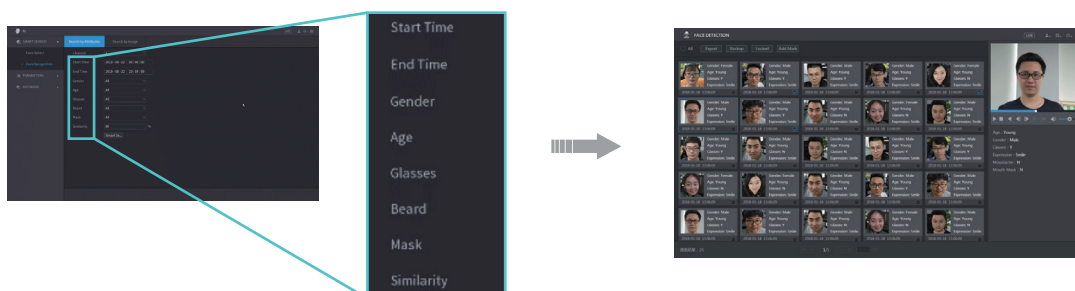
• Storage Saving while Ensuring Target Details

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 **90%** bit rate compared with H.264.

With same image quality, AI Coding based on CBR only needs **10%** of bit rate and storage costs compared with H.264.

Kbps ■ AI Coding ■ H.264

	720P@30fps	1080P@30fps	4MP@30fps
AI Coding	102	206	406
H.264	1024	2048	4096

AI Coding : 1T

H.264 : 10T

• Privacy Protection and Defense against Attacks

Privacy Protection
Follows GDPR, protects personal privacy

CA/KMS
Offers CA management and KMS that securely manages device keys

Video Encryption
Encryption protection of video data throughout its whole life cycle

Trusted Protection
Provides trusted firmware protection throughout its whole life cycle

WizSense Security

Security Alarm
Monitors and records security anomalies in real time, and notifies users for timely response

Attack Defense
Configures a defense strategy based on the scenario to proactively safeguard against external attacks

Application Scenarios

• Villa's yard

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

SMD Plus   Perimeter Protection   Push Notification   Visual and Auditory Warning
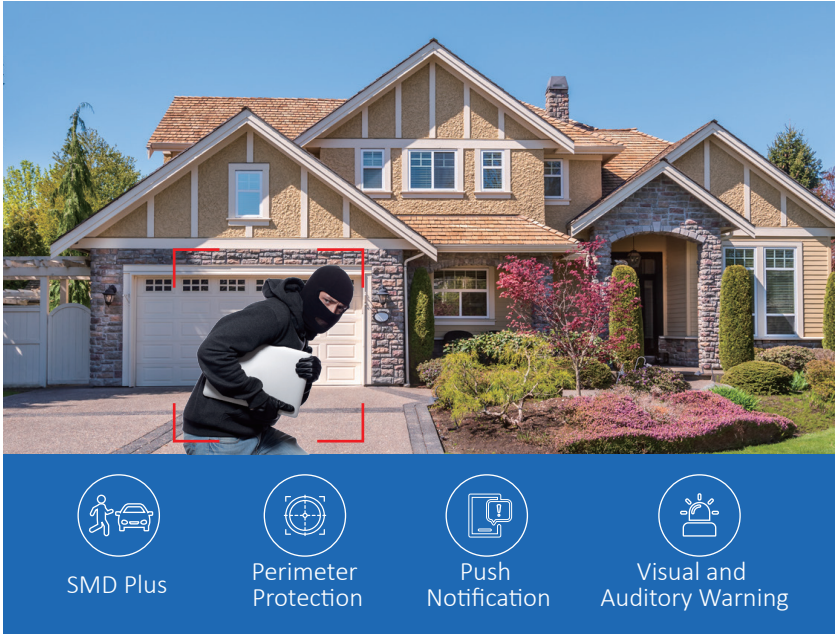
Requirements

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

WizSense creates business value while enhancing security.

Face Recognition   Push Notification
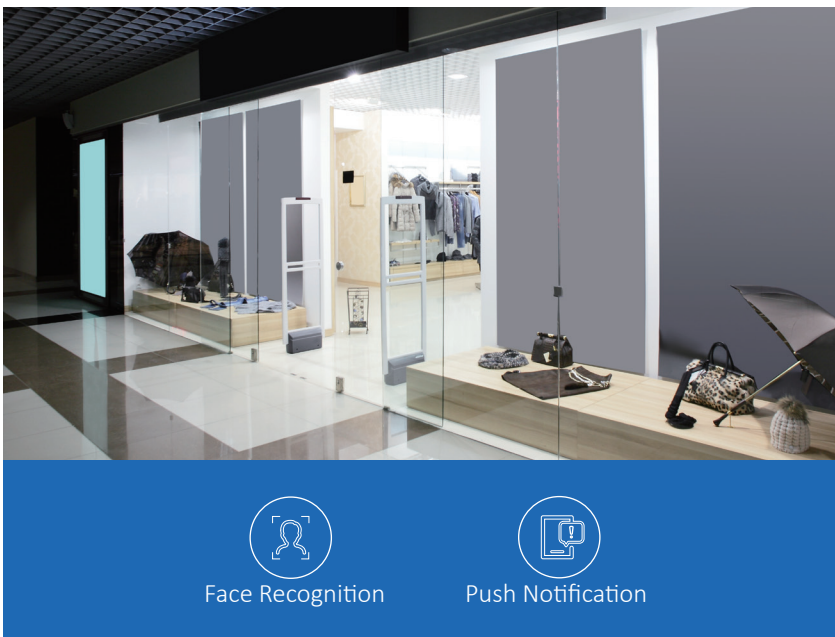
Requirements

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 record 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

WizSense improves the efficiency of monitoring center's security guard.

SMD Plus   Quick Target Search
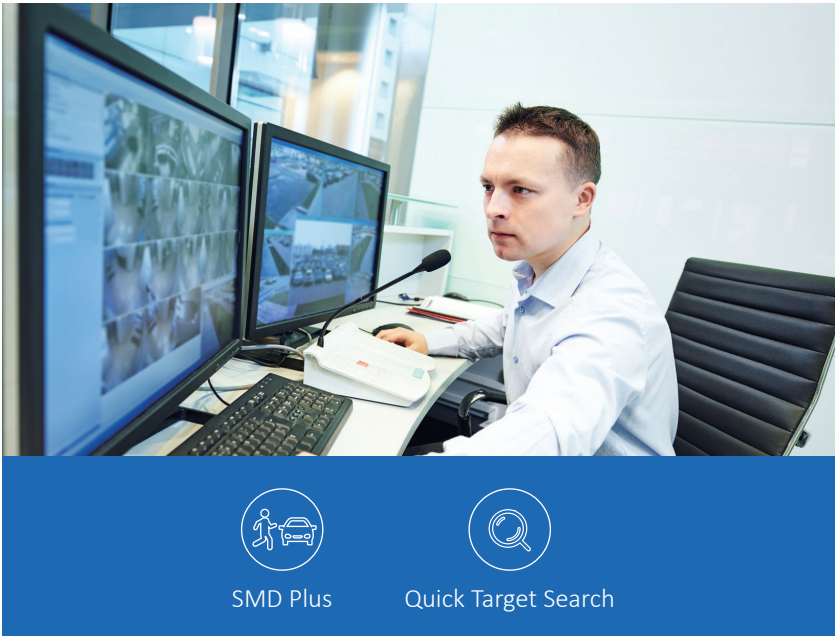
Requirements

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.

• Dangerous Area

WizSense keeps people away from dangerous areas with flexible configuration.

Perimeter Protection   Visual and Auditory Warning
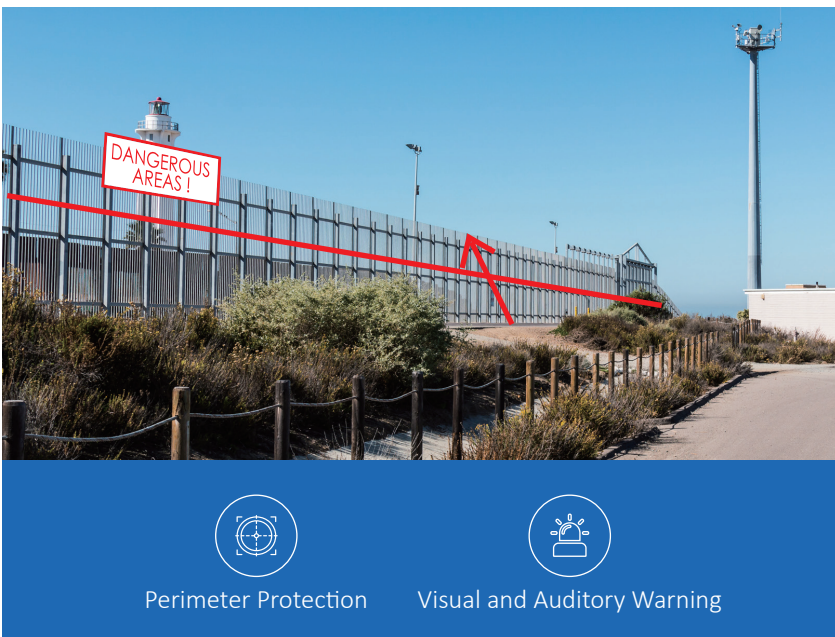
Requirements

It has been a long-standing problem for public places to ensure that visitors are safe from dangerous areas.

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.

Custom Voice Alert

Human voice is more effective than a signage. Customized voice alert will be activated once perimeter protection alarm has been triggered.

WizSense Solutions

WizSense IP Cameras + WizSense NVR

SMD Plus   Active Deterrence (PV Cameras)   Face Recognition   Perimeter Protection

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Conventional IP/PTZ Cameras + WizSense NVR

SMD Plus   Face Recognition   Perimeter Protection

HDCVI Cameras + WizSense XVR

SMD Plus   Active Deterrence   Face Recognition   Perimeter Protection

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WizSense IP/PTZ Cameras + Conventional NVR

SMD Plus   Perimeter Protection

WizSense Product Family

• WizSense IPC

Fixed Lens

2MP: IPC-HFW3241E-AS
5MP: IPC-HFW3541E-AS

2MP: IPC-HDBW3241E-AS
5MP: IPC-HDBW3541E-AS

2MP: IPC-HDW3241EM-AS
5MP: IPC-HDW3541EM-AS

2MP: IPC-HDBW3241F-AS-M
5MP: IPC-HDBW3541F-AS-M

Vari-focal

2MP: IPC-HFW3241T-ZAS
5MP: IPC-HFW3541T-ZAS

2MP: IPC-HDBW3241R-ZAS
5MP: IPC-HDBW3541R-ZAS

2MP: IPC-HDW3241T-ZAS
5MP: IPC-HDW3541T-ZAS

• WizSense PTZ

WizSense PTZ

Dual-PTZ, 25x/5x

4MP: SDT5X405-4F-WA
2MP: SDT5X225-2F-WA

45x/33x

4MP: SD6AL445XA-HNR-IR
2MP: SD6AL233XA-HNR-IR

45x/25x

4MP: SD5A445XA-HNR
SD5A425XA-HNR

25x

4MP: SD49425XB-HNR
SD49425XB-HNR-G
(4G model)
2MP: SD49225XA-HNR

• WizSense Thermal

WizSense Thermal

**Dual-spectrum
Temperature Measurement**

TPC-BF2221-T

**Dual-spectrum
Temperature Measurement**

TPC-SD2221-T

Dual-spectrum

TPC-BF1241

Dual-spectrum

TPC-DF1241

- WizSense NVR

NVR5000-I series

2 HDDs

16-ch: NVR5216-16P-I

4 HDDs

32-ch: NVR5432-16P-I

8 HDDs

64-ch: NVR5864-I

NVR4000-I series

2 HDDs

8-ch: NVR4208-8P-I

2 HDDs

16-ch: NVR4216-16P-I

2 HDDs

16-ch: NVR4216-I

- WizSense XVR

4K

1 HDD

4-ch: XVR7104HE-4K-I2
8-ch: XVR7108HE-4K-I2

2 HDDs

16-ch: XVR7216A-4K-I2

4 HDDs

16-ch: XVR7416L-4K-I2

4K Lite/5MP

1 HDD

4-ch: XVR5104HS-4KL-I2
8-ch: XVR5108HS-4KL-I2

2 HDDs

16-ch: XVR5216AN-4KL-I2
32-ch: XVR5232AN-4KL-I2

4 HDDs

16-ch: XVR5416L-4KL-I2
32-ch: XVR5432L-4KL-I2

5MP Lite/1080P

1 HDD

4-ch: XVR5104HS-I2
8-ch: XVR5108HS-I2

2 HDDs

16-ch: XVR5216AN-I2
32-ch: XVR5232AN-I2

Driving Innovation to an AIoT Future

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