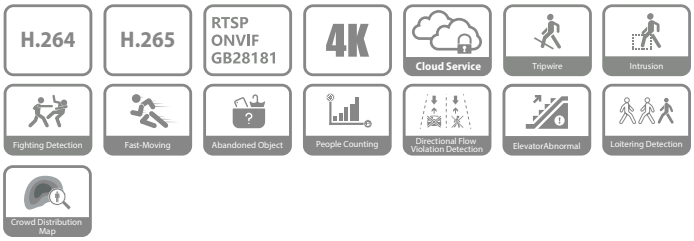
DHI-IVS-PB8000-A

Common Event Detection Server

- Adopt ASIC intelligent computing card researched and developed by Dahua, with low power consumption and high performance.
- Adopt advanced metadata and behavior analysis deep learning algorithms, and reach the world-class target detection rate and behavior analysis accuracy.
- Support dynamic loading of algorithm and chip-level separation to enhance system robustness.
- Adopt universal server with PCIE slot design, make use of old servers to reduce costs.
- Based on video cloud architecture, support standalone and clustered deployment, and meet customers' requirements to expand capacity.
- The all-in-one server (includes software and hardware) can be sold separately, and it supports connecting to third-party devices.



System Overview

Based on Dahua Video Cloud Architecture, this common event detection server adopts self-developed AI analysis card, and integrates traditional algorithm with deep learning algorithm.

This server supports connecting to cameras to acquire the real-time video stream, configuration of intelligent analysis rules, and then outputting abnormal event alarms and analysis data. Abnormal event detection includes crowd density, escalator abnormity, fighting, abandoned object, wrong-way detection, loitering detection, tripwire, intrusion and fast moving. Analysis data includes number of people in the area, and customer flow data.

This server integrates multiple intelligent algorithms, supports large-scale clusters, and dedicates to guaranteeing public security in airports, subways, railway stations, squares, offices, service halls and supermarkets.

Functions

Crowd Density Detection

Support to set max 8 monitoring areas in one video channel; give an alarm when number of people in the area exceeds the threshold for certain period; give an alarm when area density exceeds the threshold for certain period; support real-time statistics of total number of people in the video of output channel; support real-time statistics and output of number of people in each monitoring area.

Crowd density:

Low density scene: People counting accuracy ≥80% (not required if there are less than 10 people);

High density scene: People counting accuracy ≥75% (20–50 people), people counting accuracy ≥80% (50+ people) (not required if there are less than 10 people).

Customer Flow Statistics

Support real-time analysis on number of people entering and leaving one area in video channel;

Target pixel ≥60×60, and accuracy >93% (in the day, no obvious obstacles).

Tripwire

Automatically detect tripwire crossing;

Target pixel ≥60×60, recall rate ≥90%, and effective rate ≥90%.

Intrusion

Monitor the forbidden area and give an alarm;

Target pixel ≥60×60, recall rate ≥90%, and effective rate ≥90%.

Abandoned Object

Monitor suspected abandoned object in key protection areas, and give an alarm (bags, luggage and boxes);

Target pixel ≥60×60.

Loitering Detection
Monitor people staying in key protection areas and give an alarm;
Target pixel ≥60×60, recall rate ≥90%, and effective rate ≥90% (less than 5 people).

Fast Moving
Detect fast moving and give an alarm;
Target pixel ≥60×60, recall rate ≥80%, and effective rate ≥80% (less than 5 people).

Fighting Detection
Detect fighting and give an alarm;
Support 8-channel analysis;
The fighting target takes up 1/4 × 1/4 of the image.

Wrong-way Detection
Monitor pedestrians who walk in the wrong way in unidirectional areas, and give an alarm;
Target pixel ≥60×60, recall rate ≥90%, and effective rate ≥90% (less than 5 people, no obvious obstacles).

Escalator Abnormity Detection
Support real-time monitoring of sudden stop and reverse operation of escalators;
Target pixel ≥60×60.

Report Generation and Export
Export alarm information in Excel, including channel name, event time, event name, event type, rule name, rule line, scene and target box.

Application

Public places such as airports, subways, railway stations, squares, offices, service halls and supermarkets.

Technical Specification

System

Main processor	One Intel Xeon E3-1275 V5, 3.6 GHz, 4C/8T
Chip	Intel C236
Operating system	CentOS Linux release 7.4.1708 (Core)
Intelligent card	1 Dahua DH-AIX3000 self-researched standard half-height intelligent card
Memory	Two 8GB DDR4 memory, maximum 4 slots.
HDD	One 3.5'' 4T disk which can be extended to maximum 16T (each disk is 4T), and maximum 4 slots. 7.2K RPM SATA 6Gbps 512n 3.5''

Common Event Detection

Multi-rules application	Set and apply multiple rules.
Detection area	Set detection area and 10 exclusion areas.
Real-time display	Display rule detection areas and target detection boxes in real-time video. Rule and target detection boxes can flicker during real-time alarm.
Crowd density detection	Support to set max 8 monitoring regions in one video channel; give an alarm when number of people in the region exceeds the threshold for certain period; give an alarm when region density exceeds the threshold for certain period; support real-time statistics of total number of people in the video of output channel; support real-time statistics and output of number of people in each monitoring area. Crowd density: Low density scene: People counting accuracy ≥80% (not required if there are less than 10 people); High density scene: People counting accuracy ≥75% (20–50 people), people counting accuracy ≥80% (50+ people) (not required if there are less than 10 people).
Customer flow statistics	Support real-time analysis on number of people entering and leaving one area in video channel; Target pixel ≥60×60, and accuracy >93% (in the day, no obvious obstacles).
Tripwire	Automatically detect tripwire crossing; Target pixel ≥60×60, recall rate ≥90%, and effective rate ≥90%.
Intrusion	Monitor the forbidden area and give an alarm; Target pixel ≥60×60, recall rate ≥90%, and effective rate ≥90%.
Abandoned object	Monitor suspected abandoned object in key protection areas, and give an alarm (bags, luggage and boxes); Target pixel ≥60×60.
Loitering detection	Monitor people staying in key protection areas and give an alarm; Target pixel ≥60×60, recall rate ≥90%, and effective rate ≥90% (less than 5 people).
Fast moving	Detect fast moving and give an alarm; Target pixel ≥60×60, recall rate ≥80%, and effective rate ≥80% (less than 5 people).
Fighting detection	Detect fighting and give an alarm; Support 8-channel analysis, The fighting target takes up 1/4 × 1/4 of the image.
Wrong-way detection	Monitor pedestrians who walk in the wrong way in unidirectional areas, and give an alarm; Target pixel ≥60×60, recall rate ≥90%, and effective rate ≥90% (less than 5 people, no obvious obstacles).

Escalator abnormity detection	Support real-time monitoring of sudden stop and reverse operation of escalators; Target pixel ≥60×60.
Report generation and export	Export alarm information in Excel, including channel name, event time, event name, event type, rule name, rule line, scene and target box.
Alarm search	Search alarm information by device, channel, event type and snapshot time.

Common Event Detection Application Scene

Scene	Widely applicable to airports, subways, railway stations, squares, service halls and malls.

Camera installation

Installation method	Support front installation and side installation. Front installation is recommended.
Height	Recommended 3 to 6 meters; 9 to 20 meters for high density scenes.
Angle	Recommended angle of depression is 10 to 75°, and target pixel is more than 60 × 60.

Performance

Video resolution	720P and above is recommended.
Camera access	One server supports the access analysis of maximum 16-channel 1080P cameras.

Port

Network	Two 1000M Ethernet ports
USB	2 front USB2.0 ports, 2 rear USB3.0 ports and 2 rear USB2.0 ports
VGA	2 VGA ports
DVI	1
DP	2

General

Power supply	100–240V, 50–60Hz, 6A–3A
Power redundancy	Single power supply
Power consumption	≤ 400W
Operating temperature	10°C to 35°C (50°F to 95°F)
Operating humidity	10%–80% RH (29°C)
Storage temperature	10°C to 65°C (50°F to 149°F)
Storage humidity	5%–95% RH (33°C)
Gross weight	16.00 kg (35.27 lb)
Net weight	8.50 kg (18.74 lb)
Dimensions	43.50 mm × 438.50 mm × 550.00 mm (1.71"× 17.26" × 21.65") (H × W × D)
Box dimensions	271.00 mm × 625.00 mm × 895.00 mm (10.67" × 24.61"× 35.24") (H × W × D)
Mounting	Standard 19" rack installation with guide rail.

Ordering Information

Type	Model	Description
Common event detection server	DHI-IVS-PB8000-A	Common event detection server

Dimensions (mm[inch])