FOORITR

Product Manual

3D People Counter

HX-CCD23 (Bus OD version)

AI

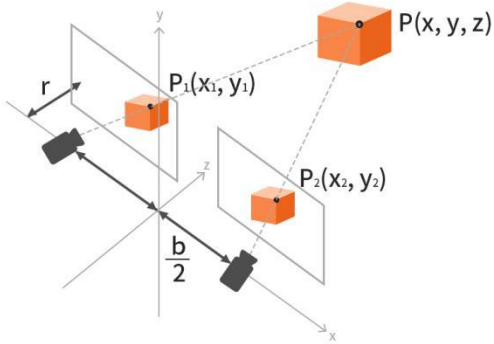
Smart Counter Provider

Core Technology

3D Binocular Vision AI Algorithm

Technical principle

1. Bionic mechanism: simulate human binocular vision, capture environmental information synchronously through dual lenses, construct three-dimensional coordinates based on triangulation, and accurately obtain object size and spatial position;
2. System composition: dual-lens module + image acquisition device, coordinate mapping is achieved through calibration parameters.

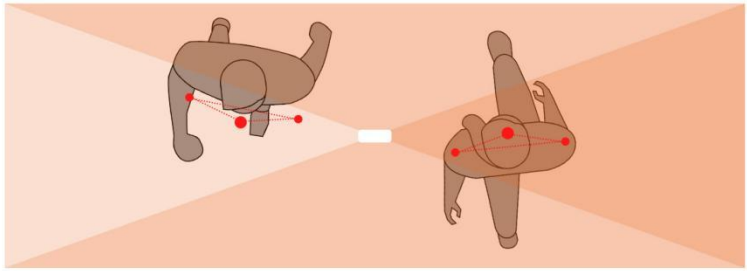


Technical characteristics

1. Real-time three-dimensional reconstruction: built-in depth calculation unit (1280×800@25fps), human body detection/tracking/height measurement based on three-dimensional data;
2. Intelligent allocation of computing power: integrated 2TOPS NPU+image accelerator, passenger flow calculation does not occupy the main computing power, and AI computing power is all used for core algorithms;
3. Real-time attribute analysis: age/gender recognition;
4. Real-time employee analysis: work badge recognition (clerk/customer distinction);
5. Future expansion: based on REID feature extraction and matching, identify repeated in and out personnel to make passenger flow more accurate.

Technical highlights

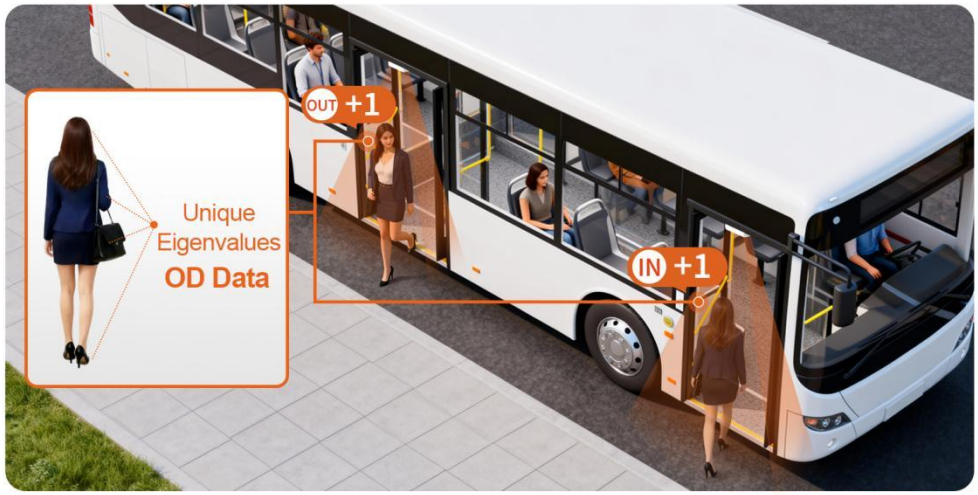
1. Precise adaptation: 3D data modeling improves the recognition accuracy of complex scenes (such as the error of distinguishing children/adults <2cm);
2. Edge computing: local processing of the entire process, without the need for cloud server support;
3. Flexible expansion: supports rapid iteration of object detection models to meet customized needs.



Core Highlights

The 3D people counter HX-CCD23 (Bus OD Version) uses a binocular stereo vision AI sensor to acquire 3D depth information in real time. Using a head-and-shoulder feature algorithm, it identifies head and shoulder features in complex scenes. Using a human tracking algorithm, it accurately counts passengers boarding and alighting.

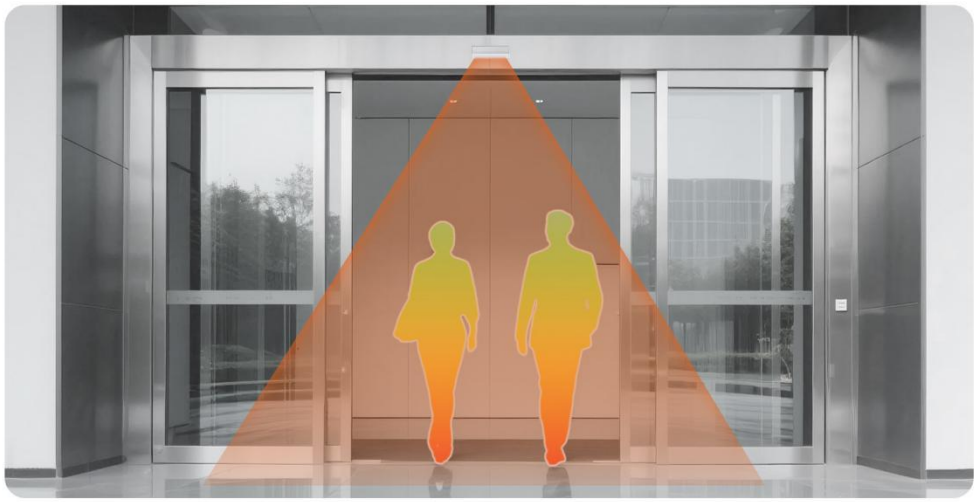
Utilizing the device's built-in AI computing power, it detects and tracks people to collect real-time boarding and alighting data. It also captures non-facial feature values of boarding and alighting passengers and stores them as unique feature value data. After the doors close and the bus is in motion, the device proactively uses AI computing power to match the unique feature values of boarding and alighting passengers to generate OD data.



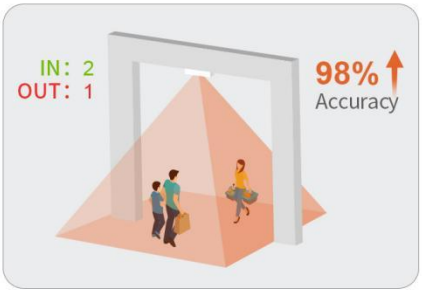
Privacy Protection

This 3D people counter, relying on stereo vision technology, is deployed in public places, focusing on accurate passenger flow statistics, and providing data support for efficient operation of the venue.

The device adheres to the bottom line of privacy protection, does not collect face recognition data, and only collects anonymous passenger flow data, such as personnel flow trajectory, length of stay, etc., for passenger flow statistics, and does not involve any personal information, which complies with GDPR.



Product Features

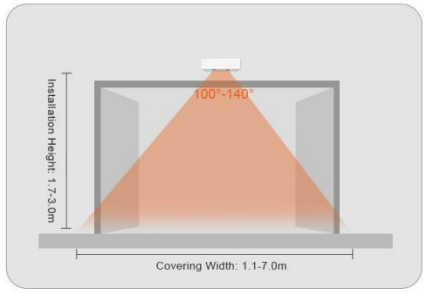


Real-time and Accurate Statistics

Real-time and accurate human body recognition with an accuracy rate of up to 98%, accurately filtering out children and other large objects.

High-performance Computing Storage

The intelligent dual-core architecture increases computing power by 20%, supports simultaneous multi-modal data processing, delivers millisecond-level AI response, and boasts a 1GB cache, increasing data processing efficiency by 50%.



Automatic Zoom Wide Area Coverage

It supports software automatic zoom, the device supports an installation height range of 1.7-3.0m, a coverage range of 1.1-7.0m, and can adapt to different installation environments.

Strong Adaptability to the Environment

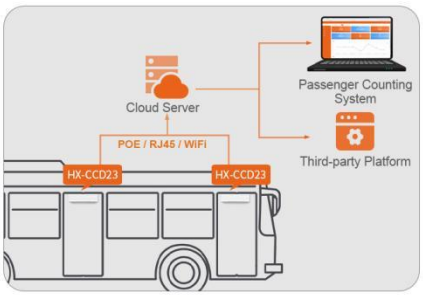
Adapt to scenes with strong outdoor sunlight, scenes with decorative lights at the door, and scenes with dim light and darkness.

High-definition Image and Video Acquisition

Equipped with a 2-megapixel imaging system, it can acquire high-definition, color images and video data.

Data Upload Timeliness

You can customize the data upload server time, which can support real-time, 1 minute, 5 minutes, 30 minutes, etc.

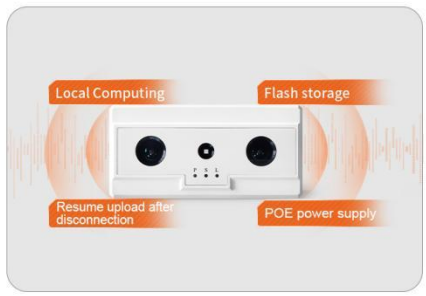


Multi-protocol Support

The device supports HTTP POST/HTTPS POST/FTP/ SFTP/MQTT protocols for data transmission, supporting data integration for device development.

Rich Open Interfaces

The device has rich local application interfaces and RS-485 expansion support, allowing developers to integrate and develop flexibly and quickly.



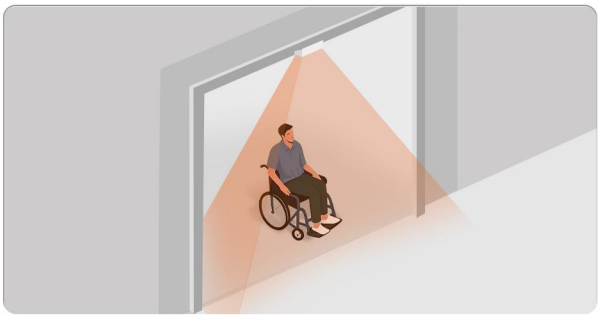
Network Smart Devices

Supports local computing without the need for a local server, and supports Flash offline storage, network disconnection and continued transmission, POE power supply, and wired/wireless connection.

Functional Mode

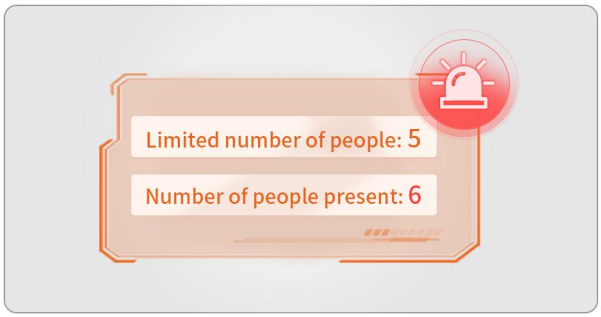
Wheelchair Mode

The number of people in wheelchairs entering and exiting can be individually identified and a signal given.



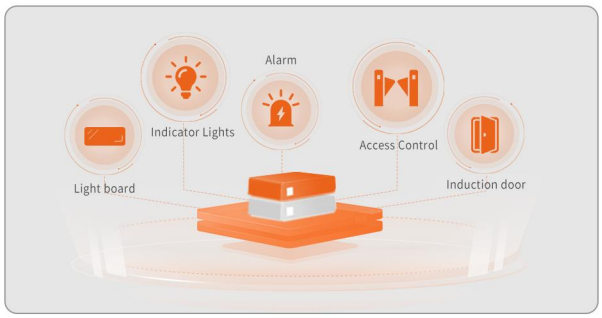
Capacity Limitation Mode

When the number of people exceeds the set value, a signal will be issued and an alarm will be sounded (an alarm is required).



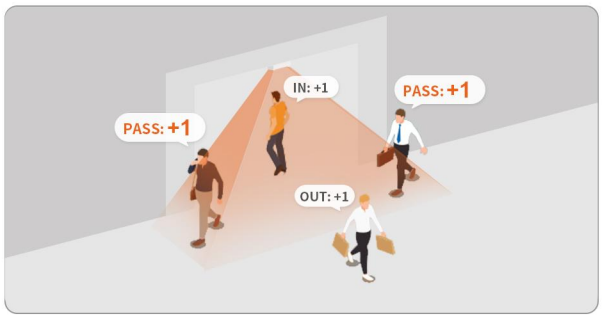
Control Mode

Equipment works with relay, control a variety of electrical appliances.



Channel Mode

Which can detect the number of people passing by the door and the number of people entering the store.



Child Mode

After setting the height of children, people who are lower than the height will be recognized as children.

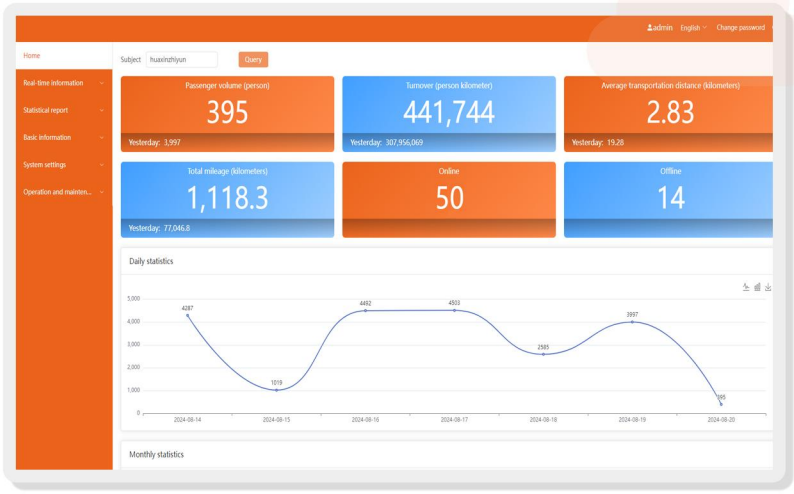
Data Display Mode

The device and the host are matched to visualize the data.

Standalone Mode

The local data of the device can be stored for 90 days, can be exported, and can be used without network.

Data Display



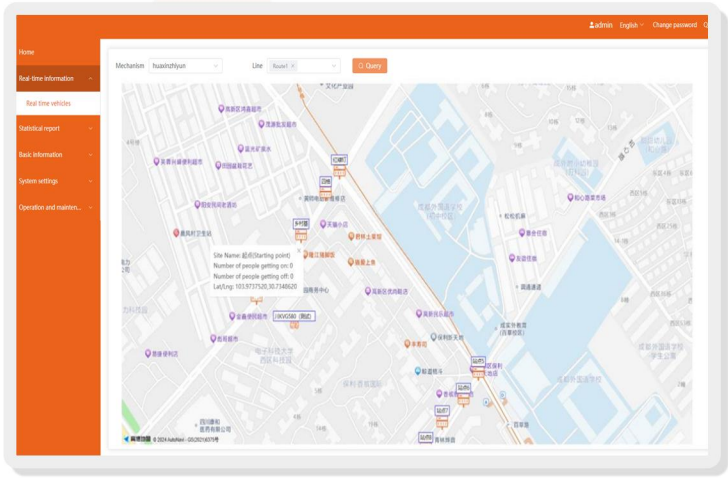
Passenger Counting System

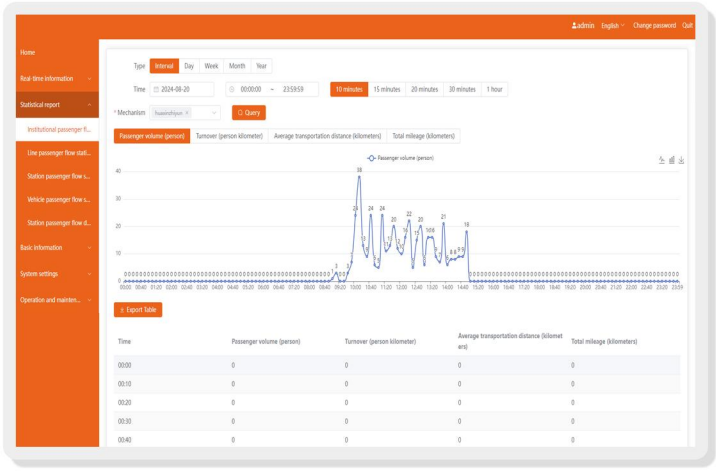
The Passenger Counting System relies on the Vehicle Counter Host and 3D people counter data upload to provide users with real-time vehicle location and real-time passenger flow at sites; multi-dimensional statistical analysis reports; basic information management.

Real-time Information

Use GPS to track the vehicle and record and query its historical routes. Provide an intuitive visual interface to display the vehicle's connection status in real time.

Real-time information: Displays the real-time location of the vehicle, station information, and the number of passengers getting on and off the bus at each station on the day.





Statistical Report

Statistics reports can provide users with institution passenger flow statistics, route passenger flow statistics, station passenger flow statistics, vehicle passenger flow statistics, and station passenger flow distribution. It presents the overall passenger flow change trend of the institution in detail, providing strong data support for optimizing resource allocation and improving operational efficiency.

Applicable Scenarios

This people counting solution is widely applicable to long-distance passenger transport, urban public transportation systems, and various scenarios that require personnel flow management, including but not limited to travel agency passenger vehicles, daily public transportation vehicles, corporate shuttle buses, passenger ships, shopping center shuttle buses, etc. At the same time, it can also be flexibly applied to places that require accurate population counting, such as supermarkets, exhibition halls, public transportation hubs (such as airports, railway stations/subway stations), entertainment venues, business halls, scenic spots, and various public entrances and exits.

FOORIR

Partners

We provide enterprises with expert teams, technical teams, marketing strategies, training support, product guarantees, and considerate services.

75+ Countries Covered	1500+ Global Clients	6000+ Retail Business

50+ Public Transportation	200+ Culture & Tourism	2000+ Public Restrooms	100+ Specialty Industries

CENTRALRETAIL · Reeder · A-SECURE · FORT DIGITAL · GoDaddy

Inkryptis AI · pentagone · EYERIDE · RETAILOGISTS

www.ANTIVOR.RU · Best Buy · Sumith · ZANDO. · Bata

PRODUCT.ME · Uppi · ts · DISTRISEGURIDAD · CITITEX

FOORIR

Office:
610097,No.88 Tianchen Road,Pidu District, Chengdu City,
Sichuan Province, China

Phone/WhatsApp:+86 18981978865
Email:info@foorir.com

www.foorir.com