

Intelligent City Bus Transit



Most of Daily Hours



Rushing Hours

What do bus companies worry about now?

A

Double Cost

Rising Oil Price and Employers Welfare

Oil price doubled in last 2 years. And all people's payment are increasing for food, house, illness and children. New vehicles and parts cost and maintenance cost **keep increasing fast**.

B

50% Waste

Low Occupancy Running Everyday

Only hot directions to downtown keep high occupancy during rushing hours. Meanwhile, cold directions buses have lots of empty seats even in rushing hours. Over 50% carriage load by **outdated schedule** are wasting everyday.

C

Future Loss

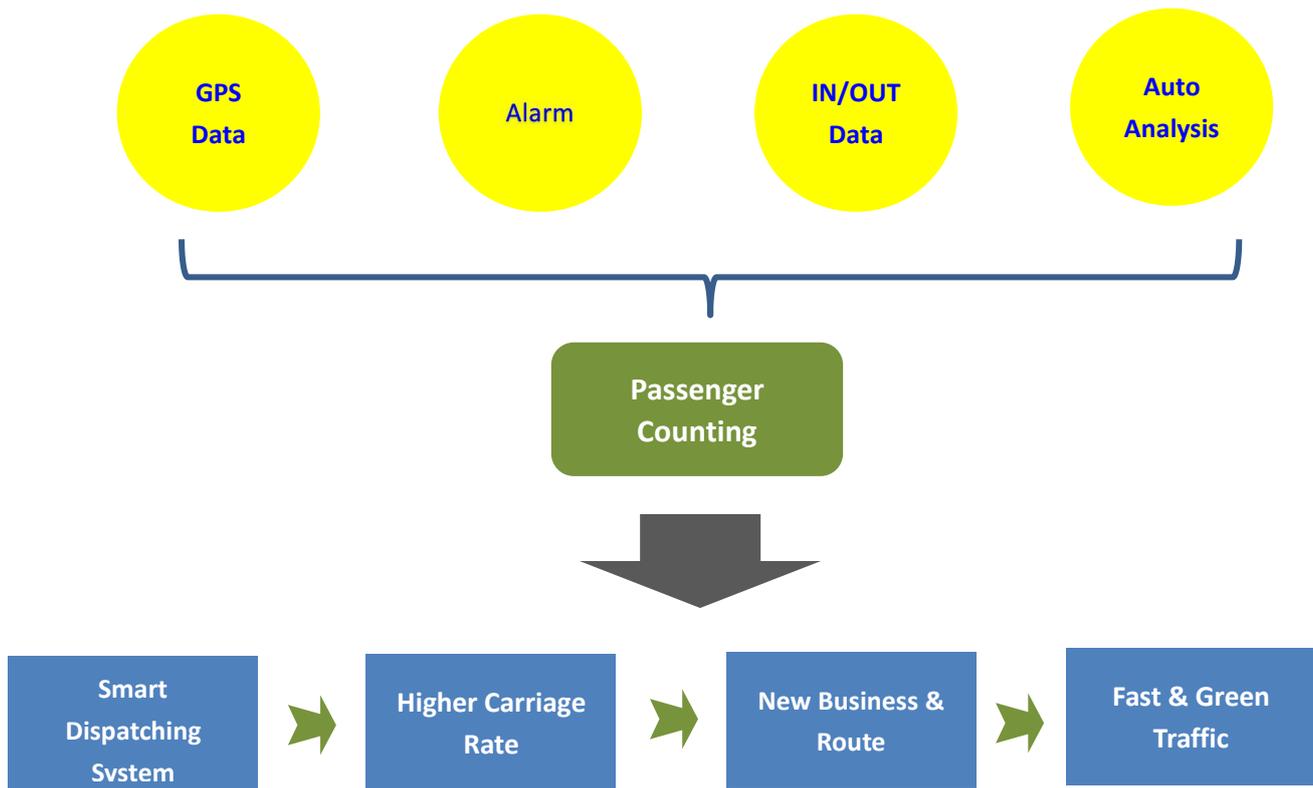
Bad Service Reputation

Few people like **slow and cold bus service** unless they can not pay for high oil ticket for their cars. **BRT and Metro and Uber** also are fiercely competitor now. Most of bus companies lose customers and income easily now.

Our Solutions

In order to solve hard financial bus companies, poor bus service, heavy city jam pollution, Watchdog Electronics develops the top professional bus passenger counting system at the leading video analysis algorithm. By grasping the big data of bus passenger flow, bus managers can easily get trend of travel demands. Then make a flexible live dispatch system with high occupancy and create new customization lines filled of profits.

Bus Passenger Counter Guide



The system will help the bus enterprises to kill expensive oil waste on empty trips, prevent unhappy employers strikes, and easily win government financial subsidies. At the same time, it will maximize the guarantee that the public can enjoy more convenient and preferential bus service.

Top Accuracy in The World

Binocular Technology

Watchdog offers the top accurate bus passenger counting device for bus companies. Our counters adopt the most reliable binocular cameras technology, which is widely applied in **advanced 3D machine vision cameras** for AI robots. Each binocular cameras will have 2CCD sensors to get a little different white and black images to judge depth of body, and **recognize the passengers' head and shoulder**, it is easy to judge the moving body is effective people, not other objects. So this technology will reduce lots of mistake counts than RFID and footage counting technology .



Left camera image



Right camera image



Disparity

Smart Door Sensors

Buses is different from shopping stores. In rushing hours, company Many passengers will stand under the camera, so cameras will keep increasing numbers. When sunshine changed, some sensors will also counting numbers without any object. That is why most of counting cameras can not work normally in real bus transit, although they work perfectly in the office.

Watchdog passenger counters work with door sensors, when door open, counter start counting. If door closed, counter will stop counting and send data to server. Door sensor will stop all wrong data during bus driving.



Bi-direction Counting Lines

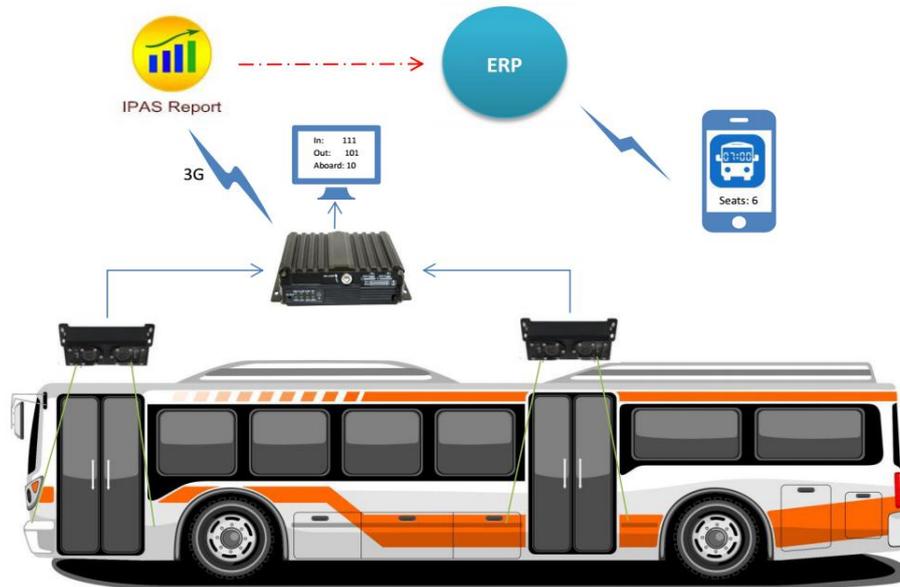
Most of people counting sensors in the world can not detect in/out direction. So such solutions often make mistake on the in/out counting result. Therefore, it will not offer precise on-board passenger numbers.

Many mistake counting happen by complicated case, passengers not always get on and off normally like shopping mall. They may pass high and low stairs, or drop this trip, or waiting for other friends. Counting lines will reduce such possibility easily.

Bus Passenger Counter Guide

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In	1					
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<p>Normal View</p>	<p>Disparity View</p>	<p>Counter</p>				

System Structure



System Illustration

Benefits from Passenger Flow Analysis



Improve Bus Company Finance

- Fast & comfortable service attract more passengers
- Prevent ticket fraud and steal
- Longer vehicle life and repair frequency



Live Dispatch on Real Demand

- Live control every bus to reduce low occupancy and carry more waiting passengers
- Reasonable change bus departure interval by real trend
- Uber-style customization bus service for company and community



Better Travel Experience and Reputation

- Realtime occupancy data and arriving time win more good fame
- More people drop driving and choose green travel
- Faster traffic with less cars on the road



Government Support and Subsidies

- Big traffic data will improve transport authority management
- Road and city development depend on travel demands
- Actual passenger data and income lose to get subsidies easily

Why You will Choose Us?



Top Accuracy

- Advanced binocular camera technology
- Rich experience on demands and feedback to improve all details
- Useful tactics to improve usual man-made mistakes



Workable Most of Buses

- Support high door, short door, double decks, wide door and 3-6 doors bus
- Everywhere is designed for buses, connection, power protection, data safety
- Unique solution for 1.9-2.1m bus in the world
- Keep nice accuracy on variable stairs of buses.



Vehicle Standard

- Stable performance for 3-4 years running, 0.06% failure rate.
- 7*24 running with lower temperature
- Low power consumption to protect bus battery
- CE, FCC, Emark Certification



M2M Quality Chips

- Super stable Hislison chips solution
- Huawei M2M 3G and 4G modules
- Car GPS module and antennas offer accurate location
- Rich IO connectors for door sensors and alarm
- M12 aviation connectors for car monitor and MDVR



Powerful Support

- Remote guide during bus installation
- Mature protocols to meet all kinds of support
- Customization functions for your projects
- Tender protection to prevent competitors
- **Unique Passenger data analytic platform**

1. Premium Counter: BPC-V1/V2 (3G/WIFI/GPS optional)

■ Interfaces



■ Features:

- ✓ CE/FCC Certificated
- ✓ OEM LOGO
- ✓ High End hardware and design
- ✓ Best quality in the bus
- ✓ Support all buses, pulse, ON/OFF, Low/High Signal Bus
- ✓ Most powerful connection for all special cases
- ✓ 2 years warranty

2. Starter Counter

■ Interfaces



■ Features

- ✓ Lower cost to save your money
- ✓ IR Remote configure
- ✓ Support most of ON/OFF, Low/High door Signal Bus
- ✓ Smaller size
- ✓ Support one connector binocular camera
- ✓ 2 years warranty

3. All-in-one Counter



■ Features

- ✓ Super Accuracy in rushing hours
- ✓ Working independently without other device
- ✓ Easy placement
- ✓ Plug and play design
- ✓ RS-485 for 254 doors max,
- ✓ Simple integration for GPS tracker, MDVR
- ✓ 2 years warranty

Customized Display in Monitor

We can offer customization on display effect according to your requirement.



Default Image (1)



Half Blocked(2)



Full Blocked(3)

Passenger Flow Analytic Platform



IPAS Report



Control



Tracking



Surveillance



Safety



Report

IPAS Introduce

We actively use the three core data of intelligent transportation, passenger flow information, traffic information, and GIS information. The escort electronics is unique in the data of the deep processing of passenger flow, directly hitting the user's needs, greatly simplifying the data analysis workload and difficulty, so that the bus enterprise management personnel can grasp the company's own vehicles, lines, sites in real time. Changes and laws, and even intelligent construction of constructive analysis reports, are automatically sent to management on a regular basis.

Our latest generation of passenger flow report analysis system IPAS2.0 is continuously optimized in vehicle registration management, site identification technology and site management, and linkage between lines and vehicles and stations. It has completely changed the traditional obstacles of relying on labor and station, as well as information barriers, saving bus companies a lot of unnecessary expenses and getting traffic information. Therefore, the dispatch center can better allocate and manage each bus, and achieve high full load rate and fast, convenient transit.



Fast -online Management

Remote Control & Upgrade

Realtime Debug Device

Intelligently Located Stations

Main Features

Smart	Realtime
	
<ul style="list-style-type: none">● Intelligently get bus stops● Bulk recognize and manage buses, lines and stops● Integration of people and vehicles data● Intelligent summary and analysis	<ul style="list-style-type: none">● Live ON/OFF/On board Data● Live position with stop name● Remote upgrade and control● Online dispatch all buses
Safe	Easy
	
<ul style="list-style-type: none">● Data resume-upload● Manual device data backup● Password protection	<ul style="list-style-type: none">● Easily data analysis for flood data● Save lots of training cost● Everyone can use it

BPC V Series Specifications

The passenger flow statistic instrument is divided into two parts, the front end is a special binocular camera for video analysis, and the back end is the host computer for processing and analyzing 3D images. The core part of the software is the mainframe.

BPC-V1/V2:

- Shockproof design
- Best temperature control
- ACC reset control
- SD Card backup records
- Electric-locked protection
- Never wrong connectors
- 3G/4G, WIFI, GPS optional
- 9-36V DC, 2-10Amp
- M12 Video out with 12V power
- CE/FCC certificated



Specifications:

OS System:	Linux
Directions:	IN/OUT Bi-directional Counting
Algorithm:	3D Depth vision technology
Counting Part:	Head and shoulder
Chips Solution:	Hislicon 3520d
Video Input:	4Ch M12, or 2CH M12 (depend on binocular cameras)
Communication:	2sets of RS-232, 1sets of RS-485, 1pcs RJ-45
Door Sensors:	6pcs IO input, 2pcs IO output.
Alarm:	IO Output and 5V Output
Storage:	ROM (10,000pcs) , SD Card(unlimited)
Optional Function:	3G, 4G,WIFI, GPS
Power:	9-36V DC, 10A max
Temperature:	-40°C to 70°C
Size:	184*248*190 (mm) /1.2Kg (G.W.)

Bus Passenger Counter Guide

Binocular Cameras:

Our binocular cameras are beautiful and compact with simple structure & convenient installation. The binocular camera is different from other common surveillance cameras, and is used for the statistical analysis of passenger flow. Infrared lights can ensure that night statistics are not affected. Black and white CCD can effectively filter other clutter and reduce the statistical error caused by sharp changes of light inside and outside the vehicle.



Specifications:

Sensors:	Sony White & Black CCD
Resolution:	800TVL
Lens:	1.8/2.8/3.6/4/6mm, depend on installation height
Bus Types:	High: 1.9-3.4m, Width:0.7-1.4m
Blind Distance:	20-30cm, depend on lens
Children:	< 1.0/1.2meter will be ignored
IR distance:	2.5meter
Video Connector:	<ul style="list-style-type: none">● 2Ch M12 Connectors (White and Yellow)● 1CH M12 Connectors (Black)
Power:	12V, 1A. Must connect to Counter
Temperature:	-40°C to 70°C
Size:	150*50*52mm/0.3Kg

BPC-X1/X2:

- Shockproof design
- Smaller Size
- ACC reset control
- SD Card backup records
- Electric-locked protection
- Never wrong connectors
- IR Remote Control configuration
- 3G/4G, WIFI, GPS optional
- 9-36V DC, 2-10Amp
- M12 Video out with 12V power

Specifications

OS:	Linux
Direction:	IN/OUT Bi-direction
Algorithm:	3D Deep Visual Technology
Counting:	Distinguish Head/Shoulder/Direction
Network:	1pcs RJ-45,
Communication:	1set xRS-232, 1set xRS-485
Door Sensor:	3x Sensors input (Pulse signal not support)
Alarm:	1sensor output,12V output
Storage:	ROM(20000pcs & SD Card Backup)
Optional:	3G, 4G, WIFI, GPS
Power:	9-36V DC, 10A, Working: <14W; Standby: <0.5W
Temperature:	-40℃ to 70℃
Size/Weight:	118 x 146 x 42 mm (mm) /1.1Kg

All-in-one Counter

- Top accuracy in the world
- Save 2/3 shipment cost
- Plug and Play
- ACC reset control
- Shockproof design
- 9-36V DC, 2-10Amp
- M12 Video out with 12V power



Specifications

OS:	Linux
Direction:	IN/OUT Bi-direction
Algorithm:	3D Deep Visual Technology
Counting:	Distinguish Head/Shoulder/Direction
Sensors:	Sony White & Black CCD
Resolution:	800TVL
Illumination:	0.001Lux
Lens:	1.8/2.8/3.6/4/6mm, depend on installation height
Bus Types:	High: 1.9-3.4m, Width:0.7-1.4m
Blind Distance:	20-30cm, depend on lens
Children:	< 1.0/1.2meter will be ignored
IR distance:	2.5meter
Video Connector:	1CH M12 Connectors
Network:	1pcs RJ-45,
Communication:	1set xRS-485(multi-doors, GPS or), USB (Export Data or Upgrade)
Door Sensor:	2x Sensors input
Alarm:	1sensor output,12V output
Storage:	ROM(12000pcs)
Power:	9-36V DC, 10A,
Temperature:	-40°C to 70°C
Size/Weight:	150*50*52mm/0.3Kg