



simply**AUTOSCOPE**

**Autoscope**<sup>®</sup>



## **IMAGE SENSING SYSTEMS, INC.**

Image Sensing Systems, Inc., the company behind the Autoscope® technology, pioneered video vehicle detection in 1984. ISS combines expertise in hardware and software engineering, machine vision processing, communications and traffic management and control. Since 1989, Autoscope systems have been deployed in many large-scale, demanding applications including signal control, highway management, tunnel safety and security.

As part of its global strategy, ISS has established a number of key alliances. In Latin and North America, ISS partners with Econolite for production, marketing and distribution of Autoscope systems. All manufacturing facilities for Autoscope systems are ISO 9001 certified.

Throughout the Asia-Pacific region, Flow Traffic Limited, a subsidiary headquartered in Hong Kong with offices in China, markets and supports Autoscope systems directly and through its own regional distributors.

Likewise, with offices in Europe, subsidiary Image Sensing Systems Europe Ltd. markets and supports Autoscope systems directly and through its own regional distributors.

## **AUTOSCOPE VIDEO DETECTION SYSTEMS**

Transportation managers worldwide are deploying video technology to move traffic efficiently and safely. They need timely information and video verification to respond quickly to incidents. Whether for surveillance, vehicle detection, data collection or traffic monitoring systems, video detection technologies are improving traffic information, system performance and cost efficiencies — ultimately, helping traffic managers improve safety, reduce air pollution and mitigate traffic congestion on roadways. Autoscope can meet all of your video detection needs.

# Autoscope® Terra

## AUTOSCOPE TERRA™

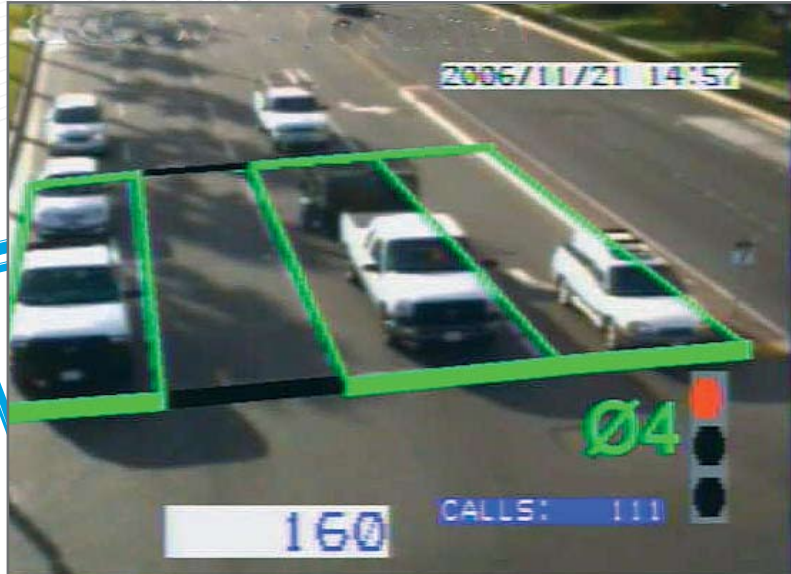
Welcome to a new generation of Autoscope products based on *Terra*™ Technology. *Terra*, meaning “earth,” is our name for the latest advancement in high-quality traffic information designed to increase the effectiveness of global transportation systems. Autoscope products with *Terra* Technology will become an integral part of leading intelligent transportation systems — a simple to use yet highly sophisticated tool to help keep traffic moving on roadways worldwide.

## WHAT IS TERRA TECHNOLOGY?

Autoscope *Terra* Technology combines state-of-the-art advances in digital video, digital image signal processing, broadband communications, and system-on-chip (SoC) processors to add versatility and boost processing performance. The benefits are clear — simpler installation, easier setup, reduced maintenance and increased accessibility. Here are the key features that characterize Autoscope *Terra* Technology:

- > High-performance video detection employing sophisticated technology to simplify installation, setup and use
- > Streaming digital video via Ethernet for system and traffic monitoring
- > Web browser communications to connect from virtually anywhere
- > Highway Wizard® for easy setup
- > Password protection for access control on shared networks
- > All of this results in safer, enhanced traffic flow and improved air quality





Autoscope delivers accurate vehicle presence detection

## URBAN TRAFFIC CONTROL

Our references include Oakland County, Michigan, which operates over **1,100** cameras in **600+** intersections.

Urban traffic control is an ever-growing challenge with vehicle ownership and congestion growing worldwide. Autoscope systems meet the challenge, providing traffic data necessary to keep roadways running smoothly, maximizing the capacity of existing roadways, and saving the time and expense of adding lanes. Autoscope video detection is a cost-effective solution that improves traffic flow without an investment in infrastructure. Autoscope systems monitor traffic flow transmitting this information to the controller so it can adjust signal timing on a large set of junctions. Such information minimizes traffic congestion and improves roadway safety. And this traffic flow information can be posted to public web sites, giving drivers real-time congestion levels, journey time, incidents and roadwork areas to guide their journey through urban roadway networks.

### Vehicle presence at the junction:

- > Stopline and approach demand
- > Turning movements
- > Degree of saturation
- > Advance detection
- > Queue measurement

### Key traffic data collection:

- > Speed
- > Volume
- > Occupancy

### Integrates easily with controllers worldwide:

- > SCATS
- > SCOOT
- > European
- > NEMA (TS1, TS2)
- > Type 170/179, 2070
- > And others

## HIGHWAYS AND BRIDGES

Autoscope systems have been integrated into many traffic management systems worldwide. A software developer's kit (SDK) **simplifies** integration enabling the retrieval of traffic data, event alarms and video images.

Highways play an ever increasingly important role in the transportation of people and goods all around the world. Autoscope systems accurately measure information such as traffic speed and volumes to monitor current congestion levels and forecast journey times. Traffic management systems use this traffic data in real-time to supervise traffic flows and monitor road capacity usage for long-term planning. Traffic information is also displayed on variable message signs and on web sites — thereby assisting motorists with current, accurate and helpful information.

Effective highway management and planning are achieved through:

- > Flow monitoring
- > Congestion detection
- > Automated incident detection
- > Ramp metering
- > Variable speed limits
- > Road works safety
- > Journey time estimation
- > Shock wave detection
- > Traffic data collection

Traffic data is measured and displayed for monitoring and analysis



Highway Wizard for easy setup

Fast detection of incidents is essential to maintain safe and smooth passage for all who enter a tunnel. With a significant number of installations worldwide, customers benefit from our vast experience in incident detection and safety systems for tunnels.

The Autoscope *Terra* system allows you to keep careful watch over all traffic and incidents in your tunnels — from stopped vehicles or wrong direction vehicles to detecting the presence of pedestrians and fallen debris from vehicles. This high attention to detail allows you to be aware of any issues so you can respond quickly. Incidents are identified, tracked, recorded and displayed to provide tunnel operators important and easy to understand information. Furthermore, the incident alarms can be customized based on the traffic patterns in your tunnel.

## TUNNELS

With a significant number of installations worldwide, customers benefit from our vast experience in incident detection and safety systems for tunnels.

### Key features:

- > Smoke/fire
- > Pedestrians
- > Debris
- > Stopped vehicles
- > Wrong-way drivers
- > Flow monitoring
- > Level of service
- > Volume
- > Occupancy
- > Classification
- > Headway
- > Average speed
- > Density
- > Speed drop



Pedestrians are detected quickly and tracked



Debris is detected inside or outside the tunnel



Smoke/fire detection for safety and fast response



Bus lane enforcement application

## SAFETY AND SECURITY

Autoscope technology is performing crucial functions at locations that require high levels of **specialized** detection.

In today's world, you have to expect the unexpected. With an array of Autoscope systems available, we provide you with the ability to enhance safety and security. Ensuring safety for roadways, tunnels and junctions has been a guiding principle of Autoscope systems for more than 20 years. And now more than ever, Autoscope technology is performing crucial functions at locations that require high levels of specialized detection.

### Security applications:

- > Detecting stopped vehicles in prohibited areas
- > Unauthorized entry in restricted areas
- > Security at high-profile buildings or roadways

### Safety applications:

- > Red light runner detection
- > Oversized vehicles exceeding safe speeds
- > Vehicles driving the wrong way
- > Work zone safety
- > Railroad crossings
- > Bus lane enforcement

**TERRA TECHNOLOGY**

**The latest advancement in high-quality traffic information**

> Simple to use > Easy installation and setup > View streaming video from anywhere

By merging **simplicity** and **sophistication**, this product provides the performance and reliability required for today's most challenging transport projects.

**The Autoscope Terra suite of products shares the following features:**

- > Vehicle detection, traffic data measurement and incident detection
- > Dual-core processor for advanced image processing
- > MPEG-4 digital streaming video output
- > EasyLink™ broadband communications, IP addressable
- > Configuration Wizard for highways

**AUTOSCOPE SOLO® TERRA™**

The Autoscope Solo Terra video detection system sets the industry standard for high performance, simple installation and ease of use. The Autoscope Solo Terra sensor consists of an integrated color camera, zoom lens and machine vision processor all in one compact unit. Now the fourth generation of Autoscope Solo products, the Autoscope Solo Terra sensor takes video detection to new levels with breakthrough processing power, Ethernet connectivity, web browser interface and a host of other exciting capabilities. By merging simplicity and sophistication, this product provides the performance and reliability required for today's most challenging transport projects.

**Key features:**

- > Camera integrated with machine vision processor in one unit
- > ClearVision™ technology ensures clean lens for high-quality video
- > EasyLink "3 wires only" reduces installation time and costs



**Autoscope® Terra**



# simply **TERRA**

The system delivers **field-proven** incident detection and traffic data collection to promote safe and efficient traffic flow on roadways worldwide.

## **AUTOSCOPE® RACKVISION™ TERRA™**

The Autoscope RackVision *Terra* is a video detection solution for tunnels, roadways and junctions. The system delivers proven incident detection and traffic data collection to promote safe and efficient traffic flow on roadways worldwide. With *Terra* Technology, the RackVision offers industry-leading performance and is easily installed and setup for the most demanding transport management applications.

The RackVision *Terra* product is available as an individual detector card or in a special system format with either 4 or 16 detector cards. In addition to the features below, the Autoscope RackVision *Terra* products includes the prior listing of five primary shared *Terra* features.

### Key features:

- > Extracts traffic data and alarms from analog video (PAL, CCIR, NTSC, RS170)
- > Up to 32 fail-safe detector outputs
- > Detector card is ideally suited for rack-mounted systems



### AUTOSCOPE RACKVISION TERRA SYSTEMS

Superior machine vision processing that can be easily networked and integrated into transport system communications networks.

### AUTOSCOPE RACKVISION TERRA SYSTEMS 4 AND 16

The Autoscope RackVision *Terra* System provides 4 and 16 camera traffic data measurement and incident management solutions for highways, bridges and tunnels. The system is also well suited for surveillance applications. The systems are typically installed at a traffic management center or in a tunnel control room. This allows operators to monitor real-time traffic and respond to incidents in an appropriate manner.

**Key features:**

- > 4 or 16 modular video input channels (PAL, CCIR, NTSC, RS170)
- > 4 or 16 network addressable RackVision *Terra* System Modules



Superior machine vision processing that can be easily **networked** and **integrated** into transport system communications networks.



## AUTOSCOPE RACKVISION SYSTEM 1 AND AUTOSCOPE ATLAS

### AUTOSCOPE RACKVISION SYSTEM 1

The Autoscope RackVision System 1 is a single-camera video detection shelf-mount solution that delivers outstanding machine vision processing for highways and "T" junction applications. The RackVision System 1 is a cost-effective choice for small or single-camera installations.

#### Key features:

- > Vehicle detection, traffic data measurement and incident detection
- > One (1) video input channel (PAL, CCIR, NTSC or RS170)
- > Network addressable
- > Local language support

### AUTOSCOPE ATLAS

The Autoscope Atlas™ machine vision processor is a two-camera video detection system that can be used in place of loops for stopline and approach vehicle detection for junction control. The Atlas processor card slides easily into a rack to provide detection for two approaches to the junction, providing a cost-effective and streamlined solution.

The Autoscope Atlas is the ideal solution for basic junction applications that don't require comprehensive traffic data collection or incident management.

#### Key features:

- > Vehicle presence detection
- > Dual-camera processor
- > 64-pin DIN connector backplane
- > LED status indicators



The System 1 and Atlas are **streamlined** and **cost-effective** solutions for junction control.

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