

Keysight Technologies  
N9385A Wireless Intelligent  
Traffic Video Detector  
Realizing the Potential of Traffic  
and Transportation Networks

Product Note



## Introduction

With the ever increasing traffic flow around the world today, the need for ways to intelligently and efficiently manage road utilization and road traffic infrastructure has become more and more apparent. Transportation authorities around the world have been proactively installing large numbers of traffic surveillance cameras. The vast amount of data that comes out of these surveillance cameras means that an intelligent system needs to be in place to extract data and systematically analyze it for next level actions. The Keysight Technologies, Inc. N9385A Intelligent Traffic Video Workstation aims at realizing these objectives and more.

## How it works

Keysight's N9385A Wireless Intelligent Traffic Video Detector introduces a new concept for digital traffic analysis. The Video Detector goes beyond what a conventional traffic camera does – it not only captures live traffic videos; the traffic information from the video is harvested live by the system itself. The traffic information and analysis results are then relayed via wireless transmission to a specified destination, eliminating the need for costly cable or fiber optics installation, thus translating into significant savings in terms of implementation, operating and maintenance costs.

The Keysight N9385A Video Detector is deployed like any other traffic camera on roads or any other traffic infrastructure, but without the need for additional cables for data relay. The system's camera captures real time traffic video that will be passed on to the embedded processor; thereafter, with Keysight's patented Video Processing Algorithm, the traffic video is monitored and analyzed for critical traffic data extraction. The harvested information is then recorded into data packets that will be transmitted wirelessly via GPRS to traffic control rooms or servers where the data is further processed for various traffic control and management functions.

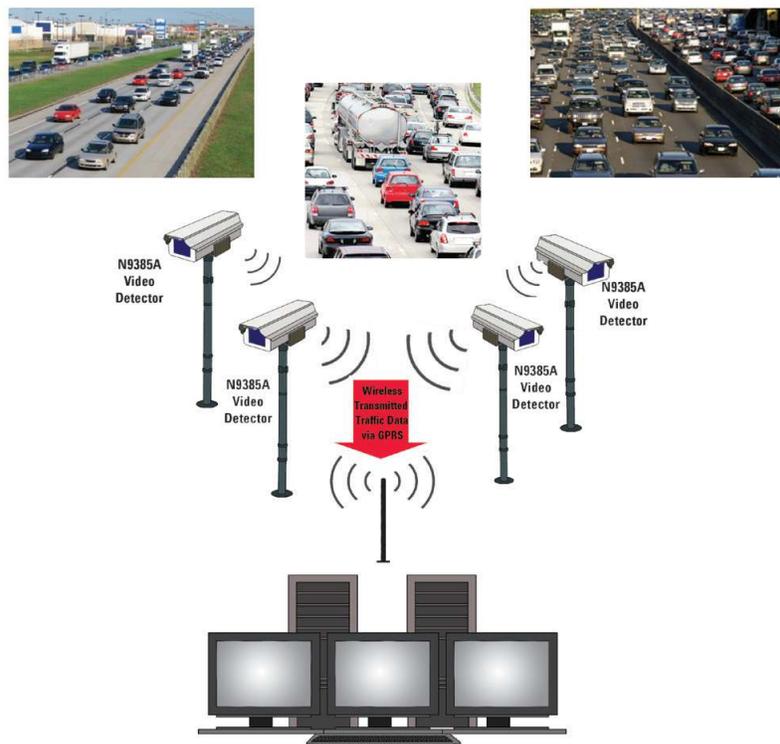


Figure 1.

## Flexibility and Power

The concept that makes the Keysight N9385A Video Detector unique is that the Video Detector does not flood traffic control room screens with multiple streams of live traffic videos. Users will not need to monitor each and every traffic area via video screens with the naked eye. Instead of numerous streams of video, the system presents clear and concise processed traffic data and analysis results to the user. This ultimately translates into increasing the efficiency of making quick and decisive actions to the traffic controllers and decreasing the possibility of information overload.

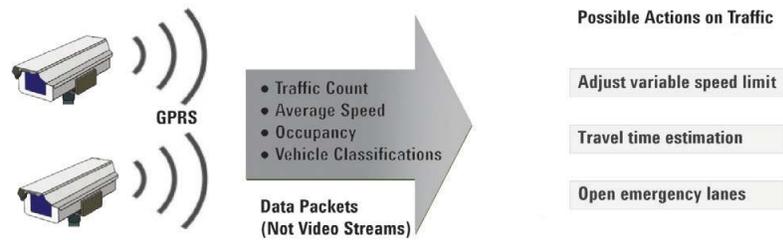


Figure 2.

# Key Traffic Data and Analysis Results Collection

The traffic data and analysis results are split into two categories, Basic Parameters and Enhanced Parameters:

## Basic Parameters

- Traffic Counts
- Average Traffic Speed
- Traffic Occupancy

## Enhanced Parameters

- Vehicle Classification
  - Classifying traffic into categories based on vehicle length
  - Presenting real time vehicle counts of each category

## Key Features

- Multi-parameter traffic analysis
- Multiple lane analysis
- Self calibrating system
- Remote setup, diagnostics and upgrade
- Traffic report generation
- Data transmission through GPRS

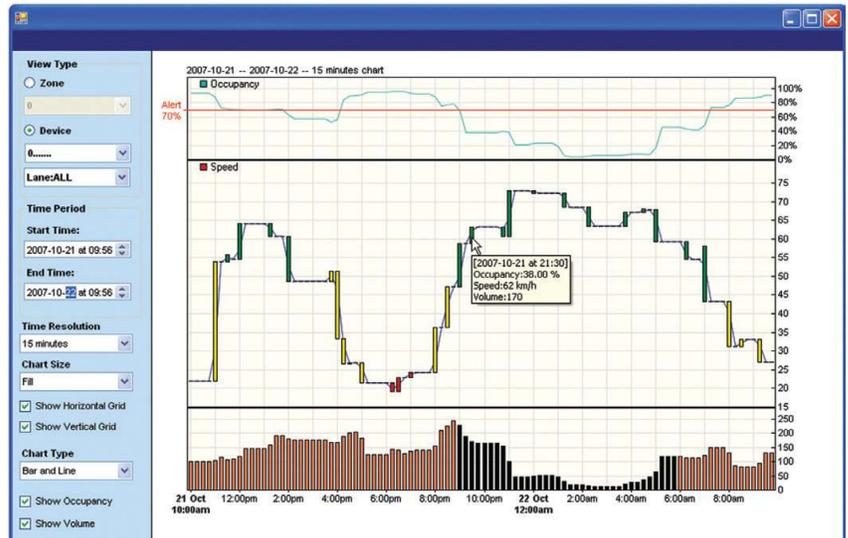


Figure 3: Example of how data analysis can be performed from the harvested traffic data

# Application Areas

## City Traffic

Traffic in urban areas has always been a critical aspect of traffic management and control. With the ever increasing number of vehicles in towns and cities, monitoring traffic in a manual fashion within a control room has become a demanding task, especially when faced with multiple cameras in various areas under rush hour conditions. With the N9384A-system, the automated monitoring and data presentation offers a quick and detailed overview of the traffic situations at each camera. This information can then be utilized for other purposes such as traffic announcements to road users, congestion alerts, and even incident alerts through various media.



## Highways and Bridges

Highways and bridges are an important means of allowing vehicles to travel from one place to another at relatively high travelling speeds; hence traffic flow, vehicle counts and traffic occupancy become important aspects. The N9384A system not only achieves these at high accuracy, monitoring can be further enhanced by incident detection and congestion detection. The harvested information can be further used for extended functions such as travel time estimation and speed limit controls.



## Intersections, Tolls and Traffic Lights

These are areas where the N9384A system can be effectively deployed by using queue detection. The monitoring results can be used for assessments to gauge and control traffic lights, opening of service or emergency lanes in long queue situations, or even to deploy traffic police for directing traffic.



# Key Strengths and System Specifications

## Key Strengths

- System transmits data wirelessly, no cables needed
- Rapid and easy setup, no cable installation and easy system configuration
- Real time traffic monitoring, data can be obtained on the fly
- Reduces maintenance and infrastructure costs
- Automated monitoring and quick data presentation, straight to the facts.
- All weather detection capability
- Day and night supportability

<b>Power</b>	
	Input: Vdc 10-15 V, 30
<b>Packaging</b>	
	Waterproof and sun shield
	Die-cast and extruded aluminum construction
	With ventilation
<b>Size and weight</b>	
H × W × L (mm)	133mm × 180mm × 540 mm
Weight	8.4 kg
<b>Communications</b>	
Wireless networks	GPRS
Wired networks	RJ45
<b>Regulatory</b>	
	CE, C-Tick
<b>Environment</b>	
Working temperature	-20 ~ 55 °C
Relative humidity	0 ~ 95%
<b>Warranty Support</b>	
	Three-year warranty
	Extended warranty available
	Support provided by Keysight trained technical support staff

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