

Video Tolling

Eliminate the need for RFID tags.

In a video tolling system the license plate number is extracted from the image by using Automatic Number Plate Recognition (ANPR) technology. The plate number is used to find the owner of the vehicle in a registered database. Unregistered vehicles are located through the Department of Motor Vehicle lookup.

The TDS Video Tolling ALPR System

The Transport Data Systems video tolling license plate reader system uses four 5 megapixel digital area scan color cameras per lane to provide redundant front and rear capture over a capture area of approximately 12 feet wide by 9 feet high. The digital video is transmitted via a IEEE1394B Firewire link to the high speed redundant Image Processors associated with each lane. The Firewire link also provides the means for triggering and for initialization and control of the camera by the Image Processor.

The Image Processor stores the captured images from every vehicle. The optical character recognition process is performed by the Image Processor associated with the camera. It can also be performed by a separate cluster of processors at the Violation Processing Center.

Each Image Processor is capable of handling both front and back cameras simultaneously. Ideally the front camera will operate in the near IR band while the rear camera operates across the full visible band. This implementation provides good front plate coverage without the safety hazards and the privacy concerns associated with the use of visible light. Further the rear camera provides a visible image of the vehicle for identification purposes. The use of a color camera further enhances the ability of the system to detect the state and identify the vehicle.

- Open Road Highways, Tunnel Entrances, Bridge Entrances

- Real Time Optimization

- High Accuracy OCR

- Rugged Sealed Enclosure

- 0 to 100 mph

- Strobe Triggering

- COTS Equipment

- Software Tool for Remote Camera Alignment

- Firewire Fiber Interface

- State Detection

Front IR Camera Image



Rear Color Camera Image





Camera Assembly

The TDS camera systems use digital cameras from Point Grey. They are enclosed in sealed enclosures for operations in rugged environments. They include a fiber extender system to allow the cameras to be located up to 1500 feet from the image processor. They are equipped with zoom lenses with variable irises that can be controlled and focused from a remote location.

Illuminator

The TDS LED illuminator products provide pulsed flash illumination to enable photo capture during low light conditions. The illuminator strobe is digitally controlled with the illuminator only being activated during the exposure period. This results in a significantly lower duty cycle which results in a low average power consumption and an operational lifecycle of 10+ years.

Basic System Elements

- Camera Assembly (Near-IR or Color 5 Megapixel)
- Strobed LED Illuminator (IR or Color)
- ALPR Processor

Optional Elements

- Trigger
- Plaza/Host Server

Software

- Linux Operating System
- Adaptive Camera Control
- Optical Character Recognition
- System Status
- Host Interface
- Alignment Tool

Optical Character Recognition

The TDS OCR engine leverages the high quality of the images provided by the TDS imaging system to quickly and accurately locate the plate in the image and deliver outstanding read rates. The TDS reader can be “trained” to a single plate style or to multiple styles to maximize the level of automation and reduce manual labor costs. Additional recognition algorithms allow for the identification of state of origin.

PlateGard Plaza Server

The TDS plaza/host server is designed to interface with the TDS image capture systems and provide a central location for storing and processing of violation images and violation transactions. The design is scalable and can be implemented at the plaza or host level in a toll collection system. Special application software is provided to optimize the OCR process when using front and rear cameras and to compress the images prior to transfer to the next higher level. The plaza server runs a database for image and violation storage. It include a web server and associated web site for viewing locally stored transactions.



Contact Info

Dick Hasselbring
VP, Business Development
619 295-5050
www.transportdatasystems.com

