





I. Purpose

License Plate Recognition (LPR) is an image-processing technology used to positively identify vehicles by the captured image of their individual license plate. This technology is based on object character recognition (OCR) is used in many security and traffic applications worldwide today. We in the parking control industry have applied this modern technology in a fully automated form to tighten the security in revenue control applications, virtually eliminating one form of fraud from the equation, like claims of “Lost Ticket” and ticket swapping.

II. Functional Description

The LPR system concept is quite simple, both in its philosophy and functional application. In LPR applications, a few additional peripheral control devices are added to both Entry and manned Exit Lanes. Each of these lanes will have a closed circuit video camera with a fixed focal length lens and auto-iris pointed (focused) on the rear of the entering vehicles. Upon passing through the Entry Lane’s lift-arm barrier gate and crossing the safety/closing loop, a signal is generated and sent to the camera to take the picture of the back end of the entering vehicle. The “frame-grabber” computer card connected to that camera then interprets the digital image it sees of the license plate, and translates that plate number into its alpha-numeric text. This entry lane information (lane number, date, time, and license plate number) along with that patron’s ticket number is then entered into the system’s database for retrieval upon that vehicles exit.

Upon exiting the parking facility, the vehicle approaches the manned exit cashier and stops their vehicle immediately adjacent to the booth. The patron then surrenders to the Exit Cashier the transient entrance ticket they received within the entry lane. The cashier then presents this ticket to the scanner connected to the Fee Computer within the booth. This start to the exit transaction triggers the video camera mounted within the Exit Lane, and focused on the rear of the exiting vehicle, to take the picture of the back end of the vehicle. The “frame-grabber” computer card connected to that camera then interprets the digital image it sees of the license plate and translates that plate number into its alpha-numeric text. This license plate number obtained by the camera through the “frame-grabber” is then transmitted to the system’s database where the data is compared to that of this plate number’s entrance data. The ticket number stored upon entry is compared by the computer to that of the ticket read to begin the exit transaction process to make certain that all data components match-up correctly. If they do the transaction is completed in a “normal” fashion. In the event the data does not match-up an exception transaction sequence is initiated. This exception transaction is then handled in accordance with established procedures by the system’s operations management. It is easy to see how this process helps plug an obvious hole that exists in traditional exit cashiering applications, which invite fraud and result in lost revenues. This is particularly costly in airport and off-airport applications where tariffs are high and the length of stay by patrons is routinely extended.

*Typical Exit Toll Plaza application:*



*In the picture to the left, the black boxes with diagonal cuts contain the closed circuit color video cameras, which are pointed and focused at the rear of the exiting vehicles. In this particular installation, appropriate illumination for operation at night is supplied by fluorescent lights overhead, mounted beneath the Exit Toll Plaza awning structure.*

**Proudly made**



**in the U.S.A.**

---

**Sysparc, Inc.**  
8841 Wilbur Avenue  
Northridge, CA 91324

---

Phone: 818 - 775 - 1832  
Fax: 818 - 775 - 1834  
Website: [www.sysparc.com](http://www.sysparc.com)