



The Master of IEEE Projects

LeMenizInfotech

36, 100 Feet Road, Natesan Nagar, Near Indira Gandhi Statue,  
Pondicherry-605 005.

Call: 0413-4205444, +91 9566355386, 99625 88976.

Web : [www.lemenizinfotech.com/](http://www.lemenizinfotech.com/) [www.ieeemaster.com](http://www.ieeemaster.com)

Mail : [projects@lemenizinfotech.com](mailto:projects@lemenizinfotech.com)

## AUTOMATIC TOLL E-TICKETING SYSTEM FOR TRANSPORTATION SYSTEMS

### Abstract:

Nowadays almost all highways toll plazas are manually operated, where an operator collects cash from the driver and provides a receipt. Since this procedure can be slow, we often encounter traffic jams at the toll plazas on busy highways. Automatic process of toll collection will save time, effort, and man power. In this work propose a low cost and efficient technique called Electronic Toll Collection using RFID modules that automatically collects the toll from moving vehicles when they cross the toll plaza. We also assume that an owner maintains a prepaid account, so that toll tax is deducted automatically from the driver's account at toll plaza. If the balance in the owner's account is low or if the vehicle is not equipped with an RF system, the toll gate remains close. In such a case vehicle owner will have to pay the toll tax in cash and collect the receipt. The owner receives an SMS message on his/she mobile about the details of the payment and there is no need for him to stop the vehicle. How many vehicles passing through the toll gate stored in a database. We can also find out a vehicle how many times passing through the toll gate in a day. Through this process of toll collection will save time, effort and man power.





## The Master of IEEE Projects

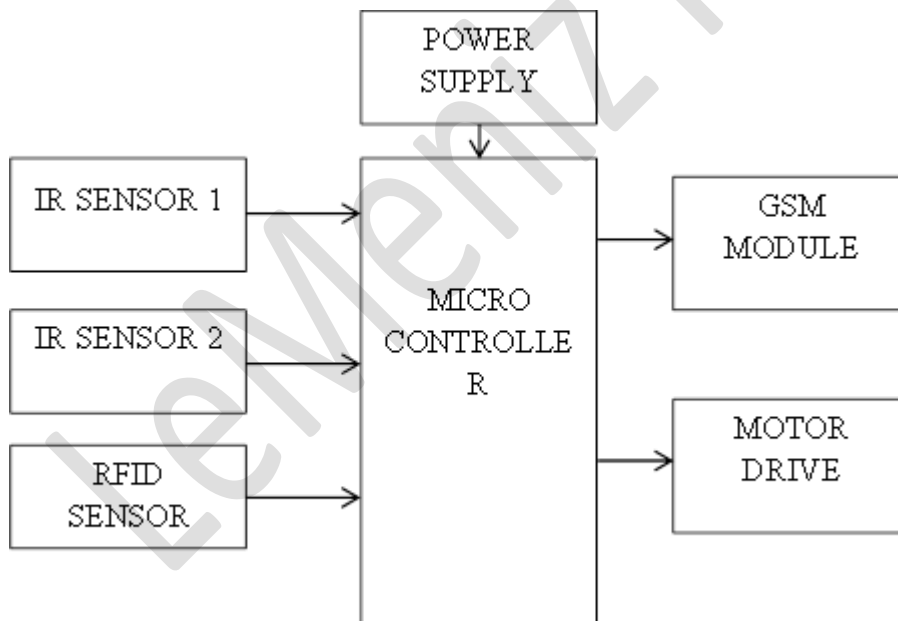
### Existing system:

The Toll plaza is still under manual operation only. A user has to collect cash from the driver and has to provide the receipt.

### Disadvantage:

- Time consuming process.
- Long waiting period in busy highway, leads to traffic jam.
- Sometimes leads to accidents in the plaza.

### Block Diagram:





LeMenizInfotech

36, 100 Feet Road, Natesan Nagar, Near Indira Gandhi Statue,  
Pondicherry-605 005.

Call: 0413-4205444, +91 9566355386, 99625 88976.

Web : [www.lemenizinfotech.com/](http://www.lemenizinfotech.com/) [www.ieeemaster.com](http://www.ieeemaster.com)

Mail : [projects@lemenizinfotech.com](mailto:projects@lemenizinfotech.com)

**The Master of IEEE Projects**

## **Proposed system:**

The automatic toll e-ticketing system is the approach used for the vehicle when it reaches the toll plaza, this is detected by using Infrared Proximity Sensor. RFID tags are used to read each vehicle with the help of RFID reader. An IR receiver is used to receive these pulses and sends it to a controller, which then transmits the vehicle number through the RF transmitter located in vehicle. We assume that vehicles have 16-bit identification numbers. The RFID tags to readers read the signal and information about vehicles owners. These RF signals are received by an RF receiver at the toll plaza, which send data to a computer's parallel port. A software program running on the computer retrieves vehicle details from its vehicle database. Depending on this information, appropriate toll tax is deducted from the pre-paid account of the vehicle's owners. The owner receives an SMS message on his/her mobile about the details of the payment. If the balance in the owner's account is low or if the vehicle is not equipped with an RF system, the toll gate remains close. Next method proposes a very simple method for enhancing the performance of infrared electronic-toll-collection systems, in such a case, the vehicle owner will have to pay the toll tax in case and collect the receipt. We need a system for handling violation and acknowledgement when a vehicle does not have an RFID module installed, a vehicle's ID number is not found in the database, or a driver has insufficient funds to pay toll. If an acknowledgement is not received in a predefined time from the database, the toll plaza gate remains closed.

Copyright © 2015LeMenizInfotech. All rights reserved





LeMenizInfotech

36, 100 Feet Road, Natesan Nagar, Near Indira Gandhi Statue,  
Pondicherry-605 005.

Call: 0413-4205444, +91 9566355386, 99625 88976.

Web : [www.lemenizinfotech.com/](http://www.lemenizinfotech.com/) [www.ieemaster.com](http://www.ieemaster.com)

Mail : [projects@lemenizinfotech.com](mailto:projects@lemenizinfotech.com)

The Master of IEEE Projects

## Advantages:

- The proposed system saves the energy as almost the IR sensors are available online every time.
- The electronic toll collection increases user convenience and eases traffic congestion.
- The low maintenance cost of the system can also help reduce the toll free.

## Conclusion:

In this Paper, the concept of Automated toll eticketing using microcontroller. We have used an innovative approach where a traveler will be able to pay the toll while in motion using RFID communication technology. Through this process of toll collection will save time, effort, and man power. How many vehicles passing through the toll gate stored in a database. We can also find out a vehicle how many times passing through the toll gate in a day. The improvement can be done to develop a multi vehicle amount deducted and send a SMS at a time multi vehicle.

## Reference :

- [1] W.-H. Lee, B.-S.Jeng, S.-S.Tseng, and C.-H. Wang, —Electronic toll collection based on vehicle-positioning system techniques, in Proc. IEEE Int. Conf. Networking, Sensing, and Control, Taipei, Taiwan, R.O.C., Mar. 21–23, 2004, pp. 643 648.
- [2] C.M. Roberts, “Radio Frequency Identification (RFID),” Computers & Security, Elsevier, 2006.
- [3] James J. Barbelllo. Handbook for parallel port design. Prompt Publications, 1999.





LeMenizInfotech

36, 100 Feet Road, Natesan Nagar, Near Indira Gandhi Statue,  
Pondicherry-605 005.

Call: 0413-4205444, +91 9566355386, 99625 88976.

Web : [www.lemenizinfotech.com/](http://www.lemenizinfotech.com/) [www.ieeemaster.com](http://www.ieeemaster.com)

Mail : [projects@lemenizinfotech.com](mailto:projects@lemenizinfotech.com)

### The Master of IEEE Projects

[4] Andy Flessner. Autolt v3: Your Quick Guide. O'Reilly Media, 2007.

[5] S.Hussain, et.al. - " Feature extraction of images from Corel database for similarity measurements"International Conference on Communication and Computer Vision 2013(ICCCV'13), Pg. No. 66-67 in Image processing and networking Domain on 20th & 21st December 2013 Organized by RVS Technical Campus, Coimbatore, India.

[6] Hussain Asif, Dr. M. N. Giri Prasad and Dr. D. Satya Narayana "Superior Reconstruction Quality improvement of CT Image for Bias Correction Variance Measures"- International Journal of Computer Applications 2012- IJCA July 2012 Published by Foundation of Computer Science, New York, USA. , Proceedings in Volume 47 - Number 5 of IJCA July 2012 ISSN: 0975 – 1888 DOI 10.5120/71859918.

[7] Hussain, et.al. - "A Prototype Model For Realistic Driving Environment System"International Conference on Emerging Technology Trends in Advanced Engineering Research(ICETT- 2012), Published by IEEE Press and in IEEE Explorer, pp 52 - 57. Baseliious Mathews II College Of Engineering, Sasthamcotta, Kollam, Kerala, India, Feb' 20th-21st 2012(ISBN 978-93-80624-62-4).

