



TimeTec Smart License Plate Recognition System

Securely Automate Authorized Vehicle Access

Hardware Installation Guide

V1.0

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1 • Introduction

License plate recognition (LPR) has been widely used in security access and surveillance application. TimeTec LPR Smart License Plate Recognition System provides high accuracy and reliable LPR solutions that can perform automated recognition of vehicle plate numbers (motorbikes, cars, lorries) for premises access control, parking and logistics analysis.

This document detailing the installation guidelines for TimeTec LPR system.

2 • LPR Camera Setup

The main components are:

- LPR camera
- Pole and bracket for holding the camera

Figures below show the suggested LPR camera location, relative to the security barrier and RFID reader.

All dimensions are in cm.

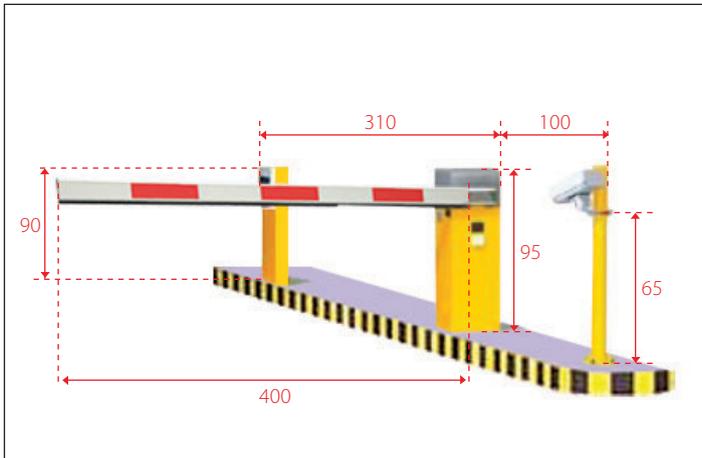


Figure 1: Camera location relative to the barrier

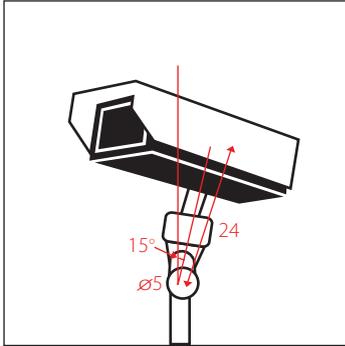


Figure 2: Camera horizontal tilt angle

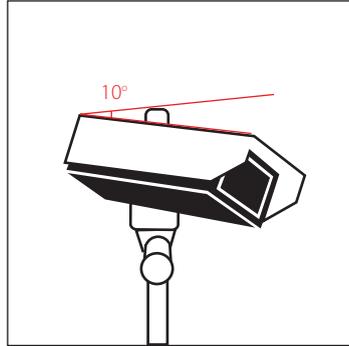


Figure 3: Camera vertical tilt angle

To get the best LPR detection, the vehicle is suggested to stop at the yellow box shown in Figure 4. Figure 5 shows an example of a car stopping at the suggested area.

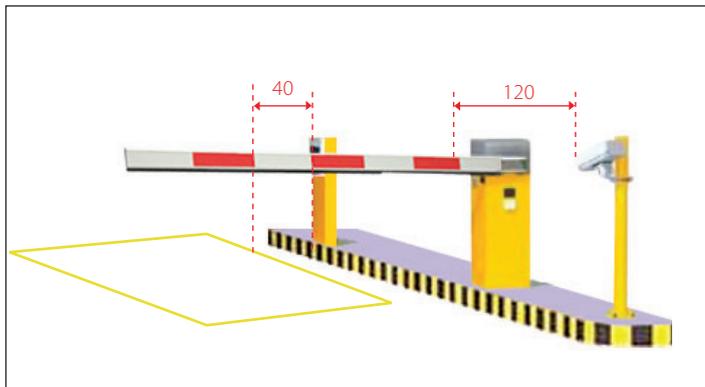


Figure 4: Suggested vehicle stopping area



Figure 5: An example of a car stopping at the suggested location

3 • Setup LPR region in Software

The LPR detection region needs to be setup in the LPR software. The settings page is located at [Main Menu > Tools > Settings](#), as shown in Figure 6 below.

Firstly, setup the entry and exit LPR cameras by entering their IP addresses. Then, logout from the system and relogin again. Now click the Setup button in the red box.

The screenshot shows the 'timeTec LPR License Plate Recognition' software interface. It features several input fields and checkboxes. The 'LPR Region Setup' section is highlighted with a red box, containing two 'Setup' buttons. The 'Camera IP Address (LPR - Entry)' field is set to '192 . 168 . 0 . 181'. The 'Camera IP Address (LPR - Exit)' field is set to '192 . 168 . 0 . 182'. The 'Camera IP Address (Face Cam)' field is set to '0 . 0 . 0 . 0'. The 'Camera IP Address (IC Capture)' field is set to 'USB camera DMR-1313'. The 'Company Name' field is set to 'Sample Sdn. Bhd.'. The 'Area' dropdown is set to 'Site A'. The 'Enable Tenant LPR Barrier Gate Control' checkbox is unchecked. The 'Enable RFID Control' checkbox is unchecked. The 'Serial COM No.' field is set to '1'. The 'Use USB Face Camera' checkbox is checked. The 'Sensac Access Controller' and 'Paxton Access Controller' radio buttons are unselected. A 'Save' button is located at the bottom right.

Figure 6: LPR software setup page

The system will provide a default LPR detection region. To redraw a region, click on the redraw button. The region should cover the minimum height of the plate (from the highest point to the lowest point) and the width should be slightly larger than the plate width. Figure 7 shows an example of the region

Note: The purpose of detection region setup is to provide a reference size for the LPR processing. Although a vehicle's plate may not appear at the same region during actual operations, the software can still recognize the plate.

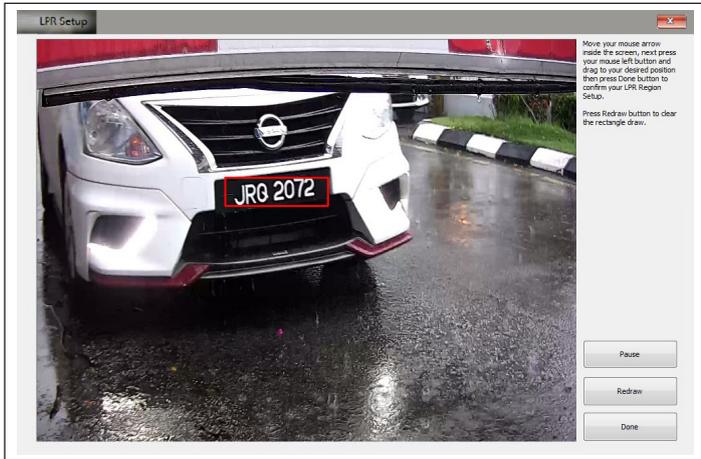


Figure 7: LPR region setup for one-line plate



Figure 8: LPR region setup for two-line plate

4 • Arm Barrier Auto-Opening Setup

The main components are:

- Relay board
- Serial-USB cable

The system can be made to trigger and open the arm barrier automatically once a registered license plate number is detected by the LPR system. Figure 9 shows the connection needed between the computer, relay board and the arm barrier controller for this purpose.

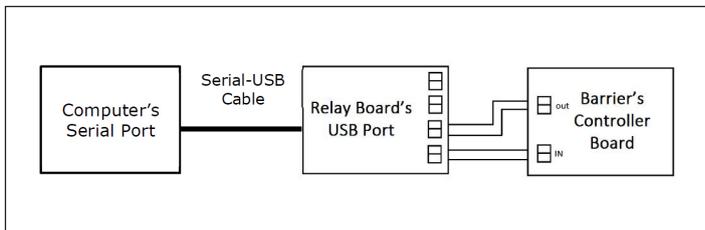
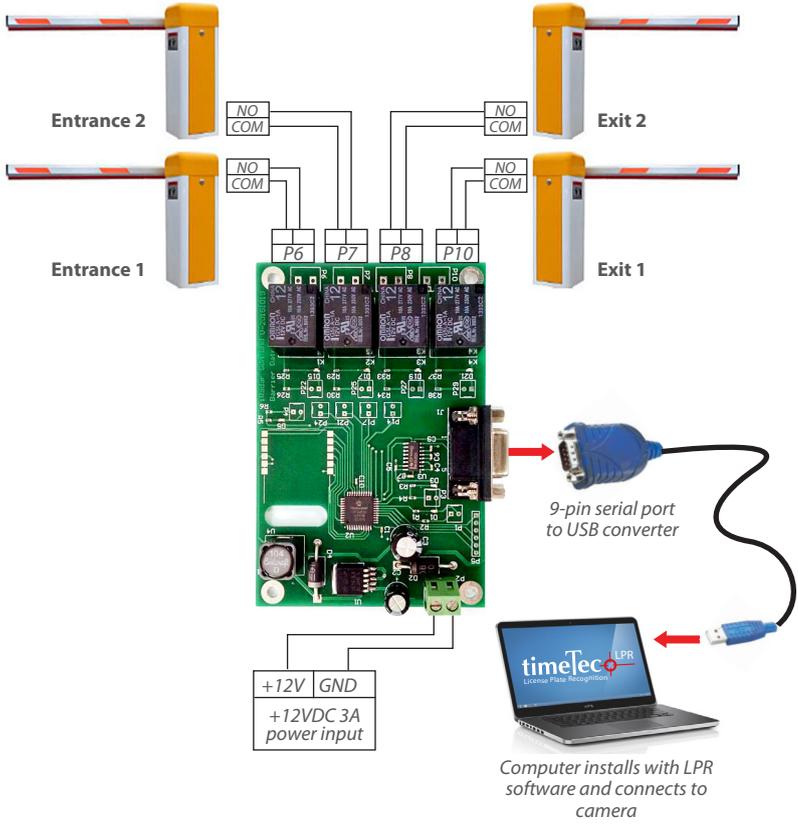


Figure 9: Connection for arm barrier auto-opening setup

5 • LPR Relay Board Diagram



Remark:

All relays in used are NO (normally open) type thus no polarity is required during wiring.

SPECIFICATION

Power Supply	12V, 1A
Temperature Range	0 – 75 degree Celsius
Relative Humidity	15%-95%
Total Relay Output	4 NO Output, Dry Contact
Maximum Current for Relay Output	10A
Maximum Voltage for Relay Output	250VAC
Communication Interface	RS232, 115200
Relay Response Time	100ms

