



HYPERMICRON MOTOR VEHICLE MODULE

HYPER
MICRON

HYPERMICRON PTE. LTD.

☎ (+65) 9162 2454

🌐 www.hypermicronsg.com

📍 68 Circular Road #02-01, Singapore 049422

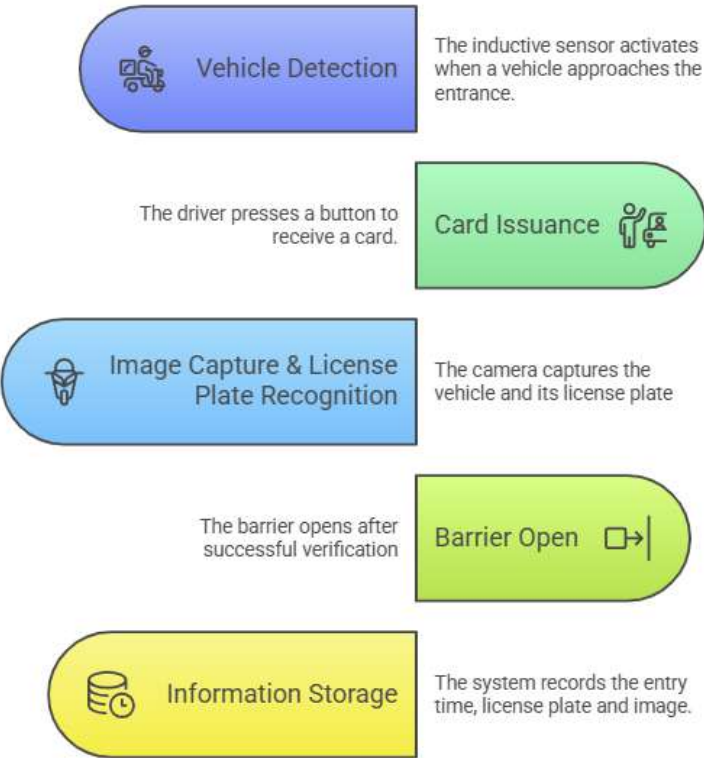
Introduce

The automated motorcycle parking management and fee collection system is an intelligent solution that automates vehicle entry/exit control, parking fee calculation, and security monitoring. This solution utilizes modern technologies such as license plate recognition cameras, automatic barriers, inductive loop sensors, automated ticket dispensers, and cashless payment to optimize parking operations.



OPERATION PRINCIPLES

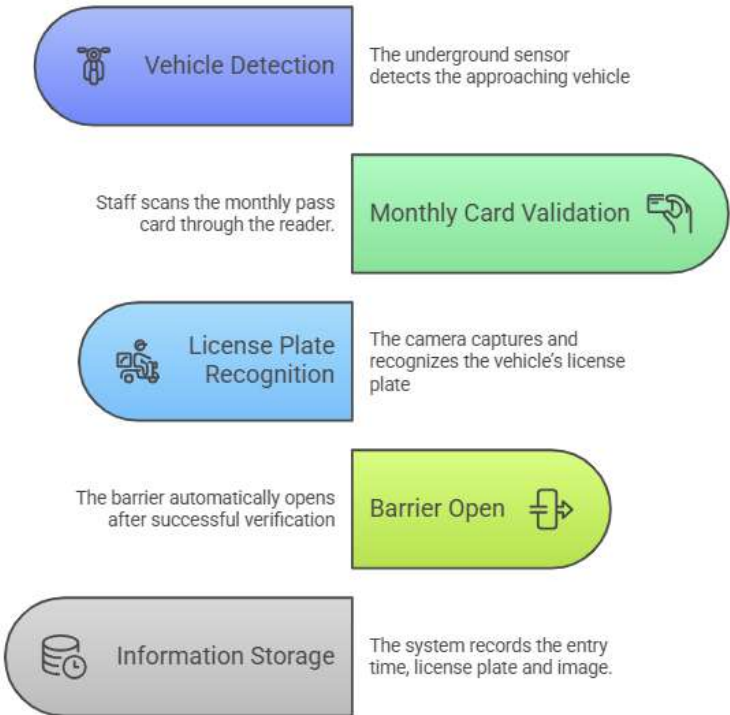
For Walk-in Customers



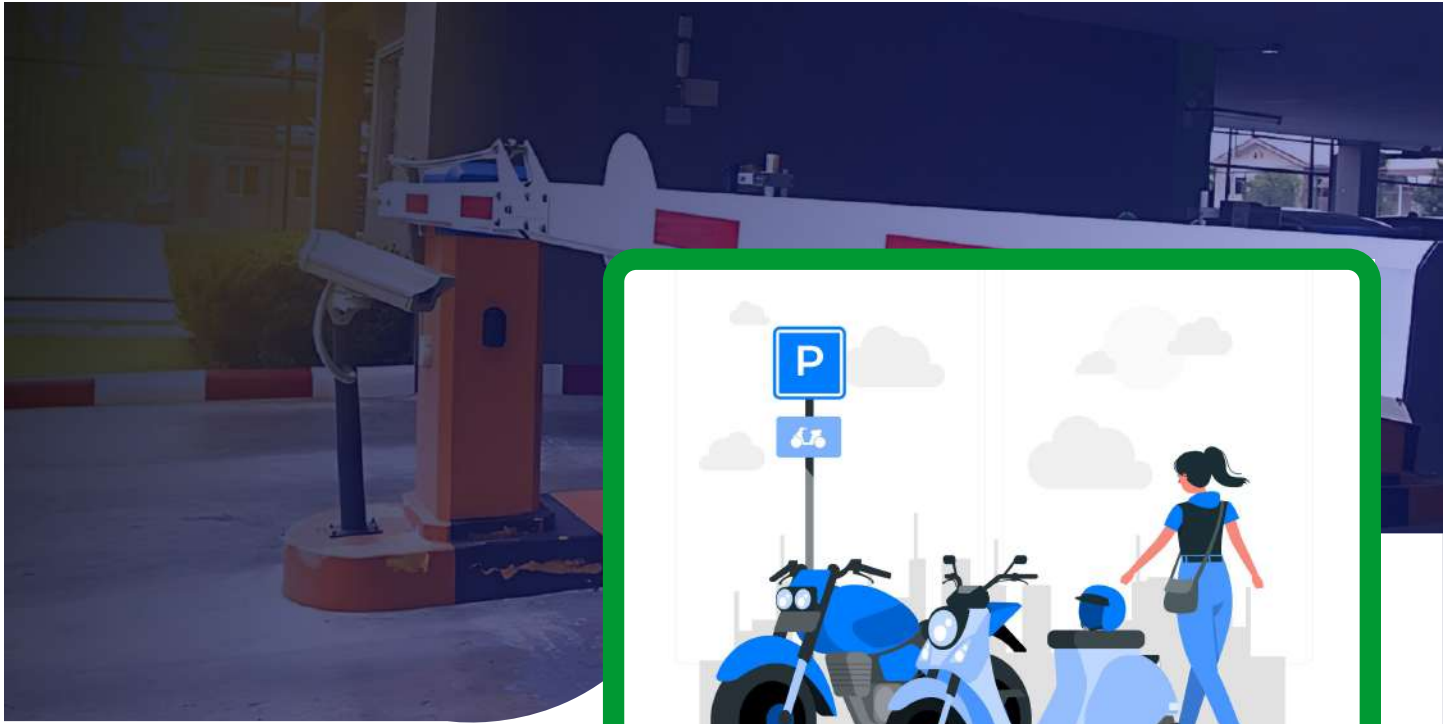
- 1. Vehicle detection: When a motorcycle arrives at the entrance, the inductive loop sensor activates the system.
- 2. Ticket issuance: The rider presses a button on the automated ticket dispenser to receive a parking ticket.
- 3. License plate recognition: The camera captures a full image of the vehicle and its license plate, storing the information along with the issued ticket ID.
- 4. Barrier opening: Once the verification is completed, the automatic barrier opens, allowing the vehicle to enter.
- 5. Data storage: The system records entry time, license plate number, image, and ticket ID for accurate fee calculation upon exit.

For Monthly Subscription Customers

- 1. Vehicle detection: Upon vehicle arrival, the inductive loop sensor activates the system.
- 2. Subscription verification: The staff scans the RFID-based monthly pass, and the system checks the registered information and validity.
- 3. License plate recognition: The camera captures the license plate and cross-references it with the registered database.
- 4. Barrier opening: The automatic barrier opens upon successful verification.
- 5. Data storage: The system logs entry time, license plate number, and image for reference at exit.



KEY FEATURES



Automated Entry/Exit Management

- Automatic license plate recognition (ANPR) ensures quick vehicle entry/exit.
- Integrated automatic barriers open only for authorized vehicles, ensuring safety and security.
- Audio notifications for entry, exit, blocked cards, expired subscriptions, and invalid tickets.
- Image data storage for verification of entry and exit pairs, ensuring accurate reconciliation.
- Real-time monitoring of available parking slots, allowing staff to track



Flexible Fee Calculation & Automated Payment

- Multiple pricing structures: Per entry, duration-based, free, daytime/nighttime rates, etc.
- Cashless payment support: Bank transfer via QR Code, bank card payments, and more.

Subscription & Walk-in Customer Management

- Customer categorization: Differentiates between walk-in users and employees with monthly subscriptions.
- Flexible subscription issuance, blocking, and cancellation as per operational needs.
- Automated monthly pass recognition via RFID card or license plate, ensuring fast entry/exit.
- Automatic subscription expiration alerts and quick renewal via the management system.



Comprehensive Reporting & Analytics

- Entry/exit statistics, total vehicle count, occupancy rates, and total revenue tracking.
- Employee performance reports, shift-wise revenue tracking.
- Incident reports: Detects unusual activities such as vehicles entering but not exiting, duplicate license plates, and system malfunctions.
- Automated daily, weekly, and monthly reports with Excel/PDF export support.

Shift & Staff Management

- Tracks employee work hours, supports automated shift changes.
- Role-based access control, ensuring employees only access authorized functions.
- Action logs for staff activities, helping detect errors and track incidents efficiently.



User-Friendly Interface

- Intuitive management dashboard with simple controls for staff.
- Clear and accurate entry/exit information display.



Scalability & Integration

Modular Design: Easily add new lanes or gates by installing additional devices and configuring the software.

Integration with Airport Systems: Connect to CCTV, central payment systems, and open APIs for real-time data sharing (reports, revenue, etc.).

Upgrade Capabilities: Support additional payment methods (QR, mobile NFC, e-wallets) and flexible pricing configurations.



Security & Data Protection

Data Privacy: Store images and videos on the airport's internal server; assign user access rights based on roles.

Secure Connections: Cameras and card readers communicate via HTTPS; all actions are logged for auditing.

Failover Architecture: Automatically switches to a backup server if a failure occurs, ensuring 24/7 uptime.

Anomaly Alerts: Instantly notifies staff of fake cards or mismatched license plates, enabling rapid security response.

Benefits of system deployment



Time Efficiency

Reduces processing time to 3-5 seconds per vehicle, increasing throughput for entry/exit.



Enhanced Security

Automatic alerts for unauthorized vehicles and fake license plate detection, preventing vehicle theft.



Operational Optimization

Minimizes errors and ensures clear revenue management.



Improve user experience

Flexible payment methods and user-friendly interface.



Cost Savings

Reduces workforce by 50% in fee collection, lowering operational costs.