With the rapid development of the global economy and the consistently improving living standard, there has been a growing number of vehicles. For efficient vehicle management, there has been an increasing number of parking lots and vehicle management areas beginning to use License Plate Recognition (LPR) products and Ultra-high Frequency (UHF) products. The automatic license plate identification enables fast vehicle access to parking, which provides convenient user experience.
There are various kinds of UHF tags in this long distance fixed vehicle access management application.
Automatic Vehicle Recognition
(With UHF Reader and UHF Tag)

Its operation starts when a user with the passive tag drive through the UHF reader located at the entrance of the parking lot. The UHF reader will recognize the tag. The carpark barrier will lift up for access upon valid recognition. If not, access will be denied.

UHF Reader senses the UHF Tag when vehicle is approaching its reading range

Boom Barrier is lifted once the verification is confirmed

Automatic Number Plates Verification
(With LPR Camera)

LPR technology is an application of computer video image recognition technology in license plate identification area. Its operation starts when the vehicle is located at the entrance of the parking lot, the LPR Camera will scan on the license plate character, and its recognition technology will identify the license plate number, color and other information. If the number on the license plate is valid, the car park barrier will lift for access, otherwise, no access will be allowed.

LPR Camera scan the number on the license plate when vehicle is approaching its reading range

Boom Barrier is lifted once the verification is confirmed
Dual Number Plate Authentication
(UHF and LPR Based Two Level Authentication System for Vehicles)

Dual number plate authentication is a Multi-factor authentication to use of several authentication techniques together. Once the vehicle is located at the entrance of the car park lot, both of the UHF reader and LPR Camera will start to recognise the UHF Tag and the number plate on the vehicle. If the verification of the number plate and the UHF tag is valid, the car park barrier will lift for access, otherwise no access will be allowed.

Blacklist and Whitelist Management

Car Park System management Software includes Role and Black and White Lists. If the cars are pre-set on the white list, including fire trucks, police cars, and privileged cars, can enter and exit the parking lot free of charge. Otherwise, cars on the black list are not allowed to enter or exit the parking lot.
There are two kinds of UHF tags in this long distance fixed vehicle access management application.

**Option 1**  
**UHF Anti-Metal Electronic Tag** Fixed on the car plate

UHF anti-metal electronic tag can be fixed on the upper and lower edges of the license plate.

**Option 2**  
**UHF Anti-Tear Electronic Tag** Fixed on the windshield

UHF Anti-Tear Electronic Tag is an electronic label which is pasted on the windshield of the car. This tag should be installed in an appropriate place on the windshield inside the car.

The distance between the UHF tag and the metal frame shall be 80 mm at least, the checked options in the figure above are recommended.
UHF Reader

The UHF RFID reader is an RFID long-range proximity card reader which can simultaneously read multiple passive UHF tags at ranges up to 12m. The reader is waterproof and is suitable for use in a wide range of RFID applications, such as transport management, vehicle management, car parking, production process control, and access control.

License Plate Recognition (LPR) Camera

LPR technology is an application of computer video image recognition technology in license plate identification area. This technology through the license plate crawling, image pre-processing, feature extraction, license plate character recognition technology to identify the license plate number, color and other information.
Installation

Connect to Controller

Connect Parking Barrier with controller
**LPR Camera**

Automatic License Plate Recognition Algorithm HD Web video camera

- Highest resolution is up to 1920*1080P
- 2 million pixel wide dynamic CMOS sensor
- IP65 waterproof and dust proof grade design
ZKBioSecurity Parking Lots Management Software

Personnel Management

To access the personnel and employee's management interface, on which you can add, edit, delete, import, and export employee information, including Employment Number, Name, Gender, Phone Number, Image...etc

Black And White Lists Management

Cars on the white list allow the authorised vehicle to enter and exit the parking lot free of charge. Cars on the black list are not allowed to enter or exit the parking lot.

Real Time Monitoring

There are totally four monitoring screens. Super user can view the entry/exit messages of all cars as well as system messages of the parking lot.

Role Management

The super user must grant different operation rights to new users. Operation rights can be set for users in batches.

Region Linkage Management

Region linkage setting involves setting the impact of car entry and exit on the number of parking spaces of the parking area.

Provisional Rules

On the Provisional Rules interface, you can set the charging rules for provisional cars.

Shift

Start time and end time of the shift. You can directly enter the time and to select a time period.

Report

With the reports function, you can perform statistical analysis for data of the parking lot to implement overall control of the parking lot information.

Financial

Financial module mainly involves the setting of parking charging rules, flexible and rich rules as much as possible to meet the actual needs of the site project.
The Leader Of Security And Time Management Solution

Fingerprint Recognition  Face Recognition  Palm Recognition  Finger Vein Recognition  Iris Recognition  Card Recognition