ENTRANCE/EXIT SYSTEM

COMMON CHALLENGES FOR ENTRANCE/EXIT
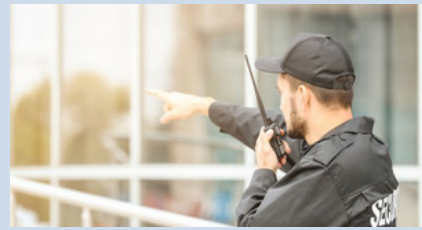
Low efficiency
Drivers have to stop car and open barrier manually

Labour cost waste
A guard needs to be on site once emergency occurs

Numerous components
Complex systems and difficult deployment

Lack of charge management

WHAT HIKVISION PROVIDES

Efficient
- ANPR-based Vehicle Management Solution
- Automated and efficient vehicle passing flow
- Non-stop solution

Lightweight
- Simpler system composition
- Easier deployment that saves training and labour costs
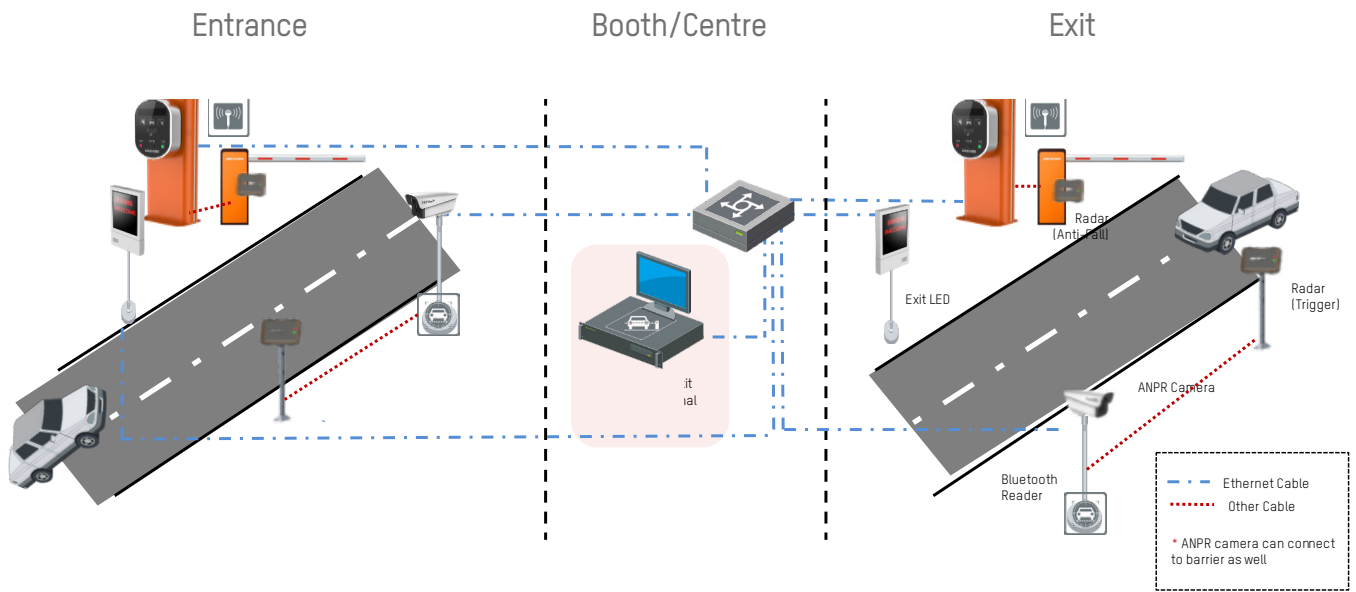- Cost-effective solution for car park

All-in-one
- The Control Terminal integrates workstation, PMS software, multiple interfaces and switch
- The ANPR Camera integrates camera, light, ANPR algorithm and license capture algorithm
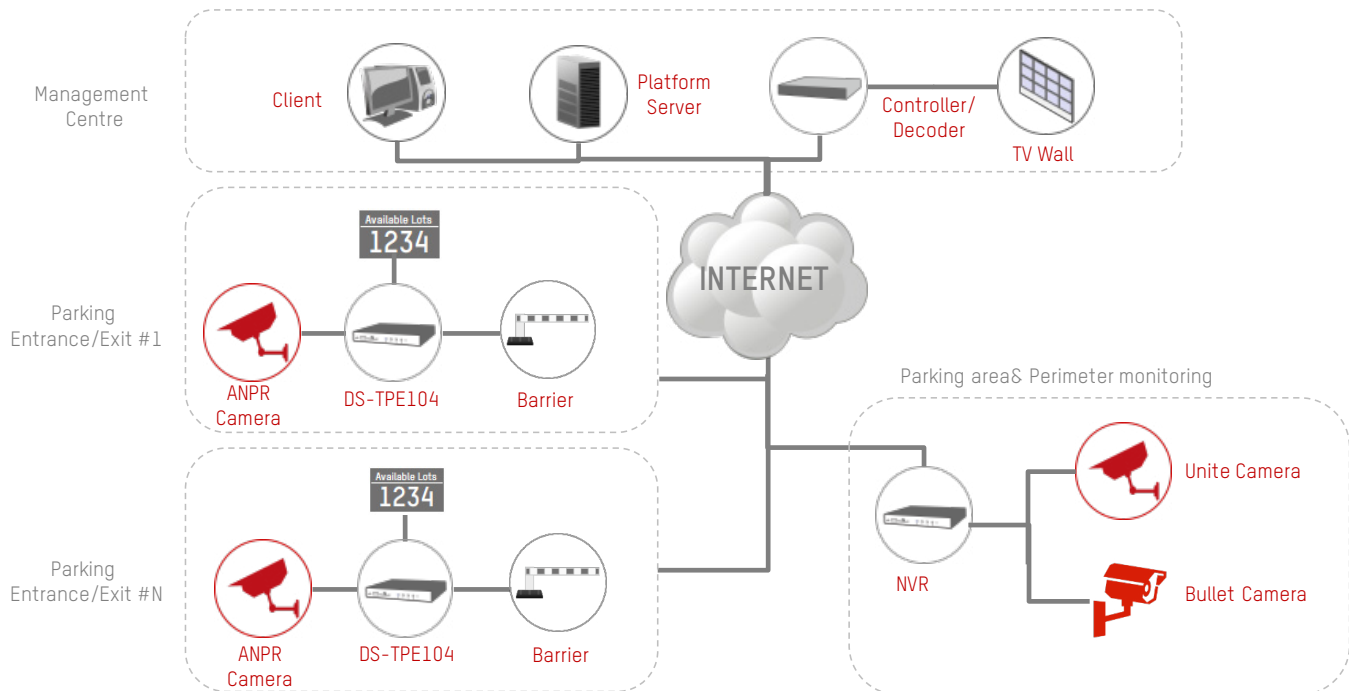
Professional
- Detailed entry and exit records and report management
- Rigorous charge management
- Effective and configurable authorisation management
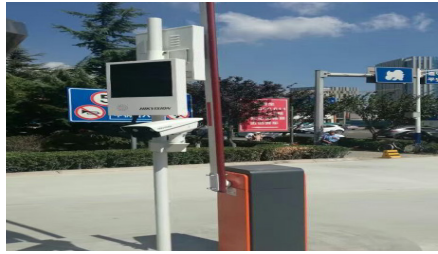
ENTRANCE/EXIT SYSTEM OVERVIEW

Entrance

Booth/Centre

Exit

Radar
(Anti-fall)

Exit LED

Radar
(Trigger)

ANPR Camera

Bluetooth
Reader

— · — Ethernet Cable
········ Other Cable

* ANPR camera can connect
to barrier as well

SYSTEM ARCHITECTURE OVERVIEW

Management
Centre

Client

Platform
Server

Controller/
Decoder

TV Wall

Parking
Entrance/Exit #1

Available Lots
1234

ANPR
Camera

DS-TPE104

Barrier

INTERNET

Parking area& Perimeter monitoring

Parking
Entrance/Exit #N

Available Lots
1234

ANPR
Camera

DS-TPE104

Barrier

NVR

Unite Camera

Bullet Camera

PARKING AREA SOLUTION APPLICATIONS

Entrance/Exit- High efficiency

- ANPR Cameras: with a Deep Learning algorithm, the camera detects moving cars with the assistance of video & radar. Cameras can also recognise VIP vehicles and automatically verify entry. The data (plate data/plate cut out, overview image and video will be stored in the server for search later. The barrier will be automatically opened via alarm out if the plate number is already registered in whitelist. The panel will indicate the plate number, helping driver to acknowledge.
- Trigger Radar: this detects an approaching vehicle and triggers the ANPR and barrier equipment. No pavement removal is required for a sensing coil.
- LED display panel integration: By integrating an LED display panel at the entrance, all available parking resources and information to guide the visitor can be seen, reducing the effort to find a space.
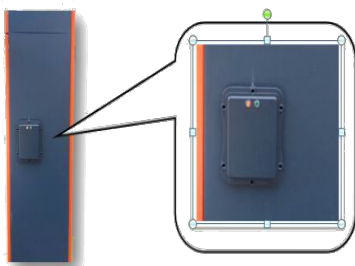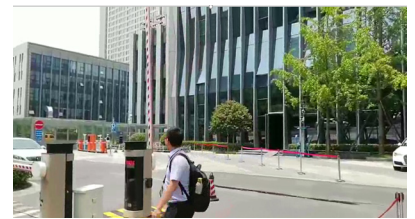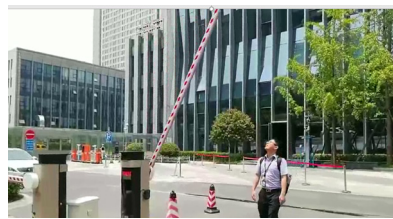
Trigger Radar & Anti-Fall Radar

- Easier installation and maintenance – No pavement removal required for a sensing coil
- Extra safety – Both vehicles and pedestrians benefit from protection
- Robust design – Unaffected by environmental influences including light, dust, rain and snow
- Trigger Radar detects approaching vehicle and triggers ANPR and barrier
- Safety sensor ensures the barrier remains open when passageway is not clear.

MANAGEMENT CENTRE

Efficiency with high security

- **Barrier control**
  The vehicle can be allowed to enter the car park automatically via a white list , and this leads to quick entry and exit with ANPR systems.

- **Multiple parking fee rules**
  Designed for temporary vehicles, such as payment by total parking length, pay-per-parking, payment by day and night, etc.

- **Data record & smart search**
  Supports license number plate & vehicle picture storage, and storage of clips showing the vehicle passing through. Supports search and view of the passing vehicle information.

- **Visitor management**
  Supports Black/white list management, alarm notification (up to 5000 plate numbers). Supports special parking alarm, including overstay and list expiration check.
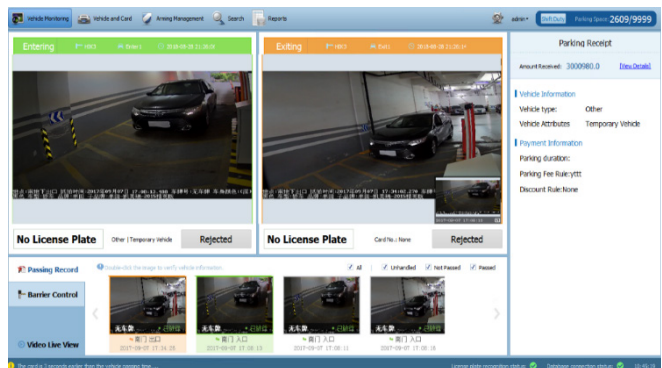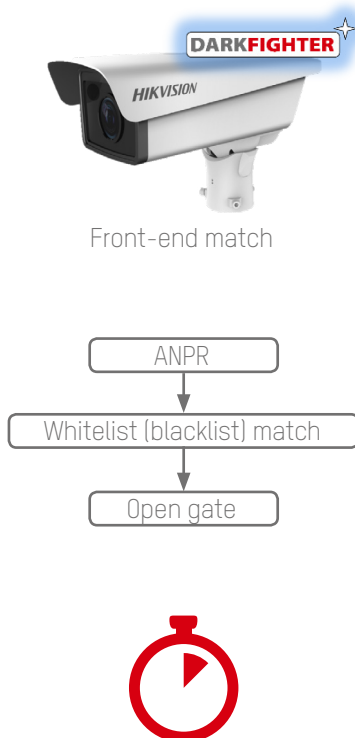
- **Count of parking spaces available**

- **Data analysis**
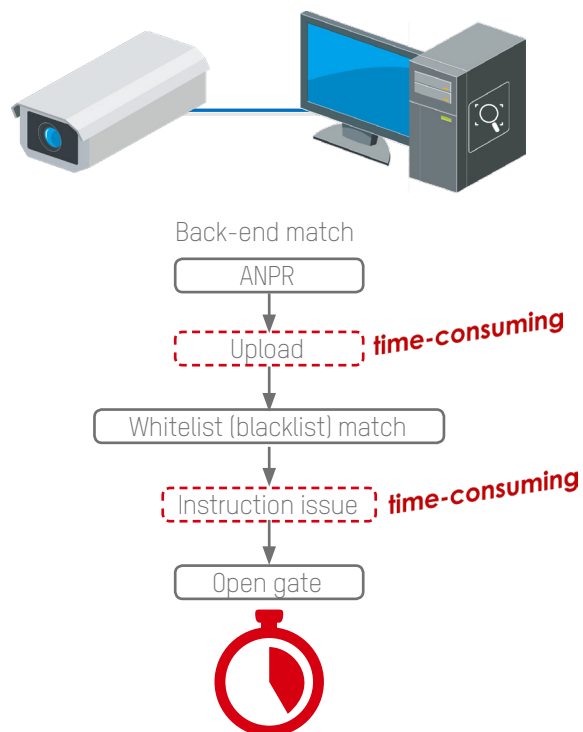 Including vehicle traffic flow report, average parking time report etc.

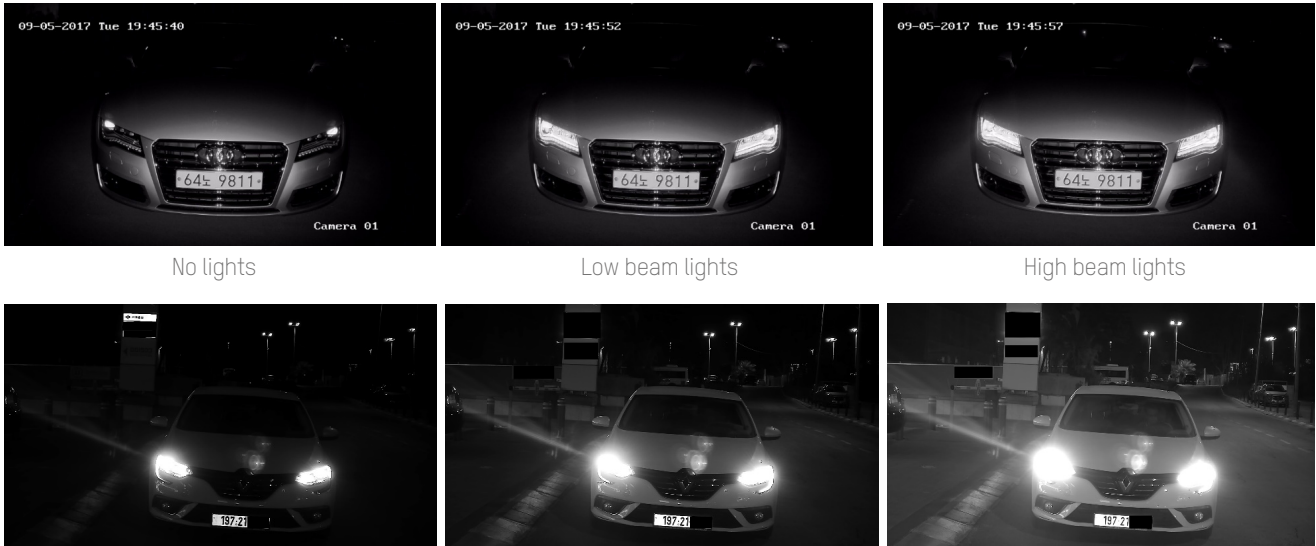# KEY TECHNOLOGY

Efficiency with high security

| Front-end match | VS | Back-end match |

Front-end match:
- ANPR
- Whitelist (blacklist) match
- Open gate

Back-end match:
- ANPR
- Upload — *time-consuming*
- Whitelist (blacklist) match
- Instruction issue — *time-consuming*
- Open gate

Anti-Glare

High night image quality in spite of high beam lights
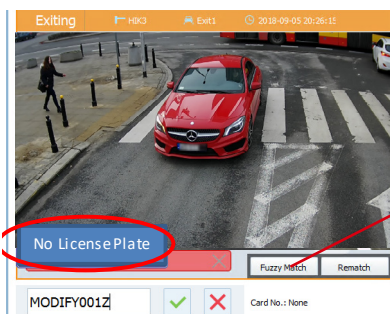

No lights

Low beam lights

High beam lights

Open Protocol for integrated

Provide abundant data through different protocol of various product combinations

Hikvision

Third-party charging system

Camera

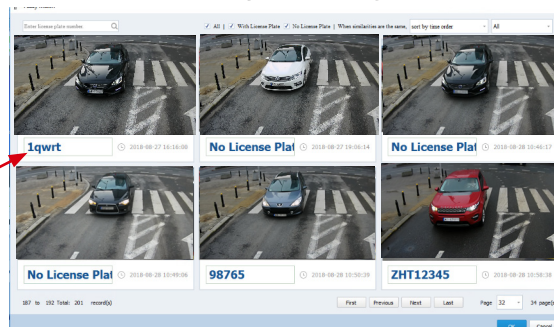TPE104

Third-party system integration
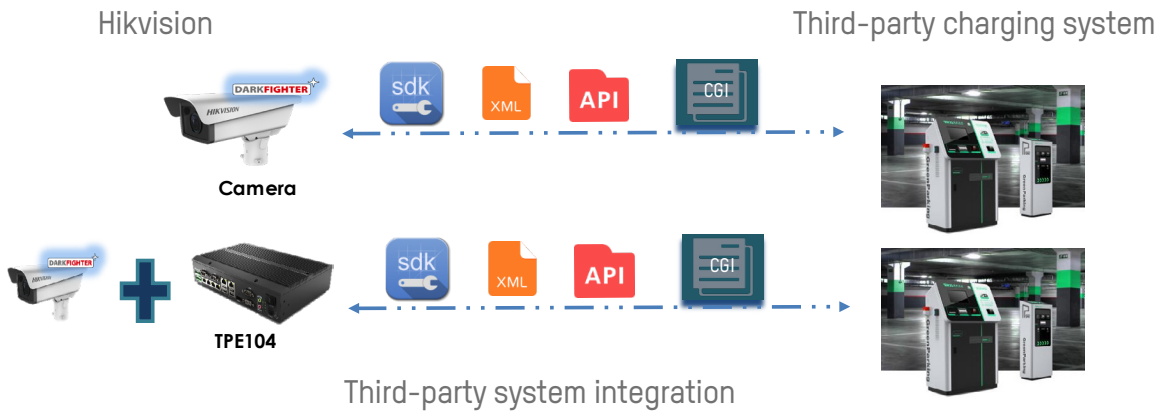
ANPR-Based solution - Exception handling

Modification of false license

Fuzzy Matching

For vehicles without matching entry record (unlicensed or falsely recognised), the operator at the exit can manually modify the false license and match the entry & exit records using a fuzzy matching function. If the entry record still cannot be found, the vehicle can pay, according to the cicumstances.

Manual Charge Management -Flexible and configurable payment rules

- **For temporary parking at tollbooth:**

Parking Rates

No charge for first 30 minutes.

Parking Time	Rate
0.5 to 2 hours	5
2 to 4 hours	10
4 to 8 hours	15
Over 8 hours	20
Maximum per day	50

Overnight parking is surcharged by the rule. Double click the picture to configure rule.

Parking Rates

No charge for first 30 minutes.

Parking Time	Rate
08:00--21:00	4/hours
21:00--08:00	10/entry
Maximum per day	50

Overnight parking is surcharged by the rule. Double click the picture to configure rule.

Parking Rates

Vehicle Type	Rate
Small-sized vehicle	4/entry
Large-sized vehicle	8/entry

Double click the picture to configure rule.

Charge by parking time periods	Charge by parking time	Charge by parking sessions

- **For parking pass:**

Customers can pay for a annual pass, 6 monthly pass, 3 monthly pass, monthly pass or other custom periods.

- **Personalised payment rule:**

More payment rules can be personalised as the customers need.

- **The system also supports discount management, card cost management, etc.**

Parking Operation – Various logs & reports

| Passing Information Search	Passing Vehicle Payment Information Search	Search Vehicle in Parking Lot	Payment Information Search	Card Information Search	Duty Shift Search	Operation Record Search	Discount Search

Various system records and reports can be provided, like passing record, passing vehicle payment record, duty shift record, operation record, discount record for real-time status trace or the operation analysis. The terminal supports storage of more than 800,000 passing records.
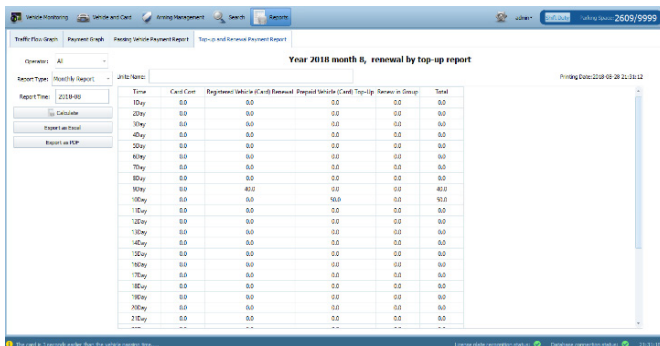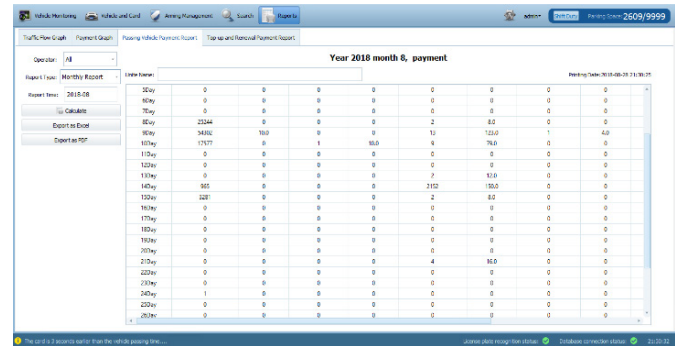
Top-up and Renewal Payment Report
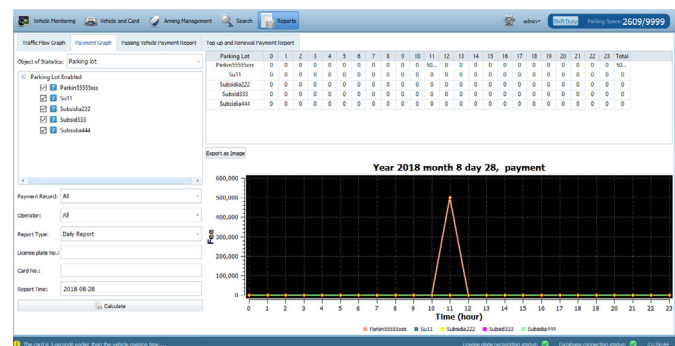
Payment Graph
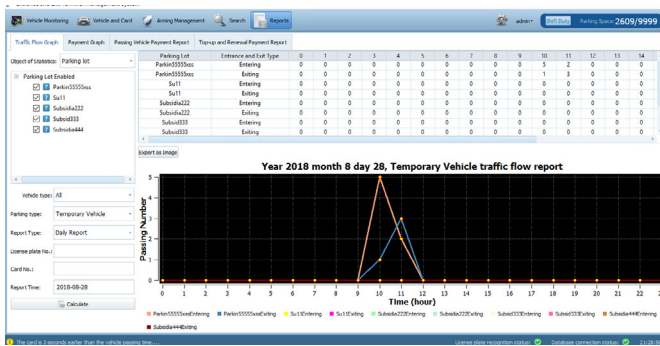
Traffic Flow Graph

Passing Vehicle Payment Report

Parking operation – Fine and Configurable Authorisation Management

Supports different role authorities - one for high-efficiency management and internal fraud prevention and another, typical authorisation setting, for administrators and tollbooth operators, as below:

Administrator

Tollbooth Operator

SOLUTION VALUE

Efficient
- ANPR-based Vehicle Management Solution
- Automated and efficient vehicle passing flow
- Non-stop solution

Lightweight
- Simpler system composition
- Easier deployment that saves training and labour costs
- Cost-effective solution for car park

Flexible
- Flexible Entrance/Exit control method, including ANPR, Card/Ticket, and Bluetooth.

All-in-one
- The Control Terminal integrates workstation, PMS software, multiple interfaces and switch
- The ANPR Camera integrates camera, light, ANPR algorithm and license capture algorithm

Professional
- Detailed entry and exit records and report management
- Rigorous charge management
- Fine and configurable authorisation management

Safe
- Black list alarm
- Radar can protect the vehicle and personal from barrier falling
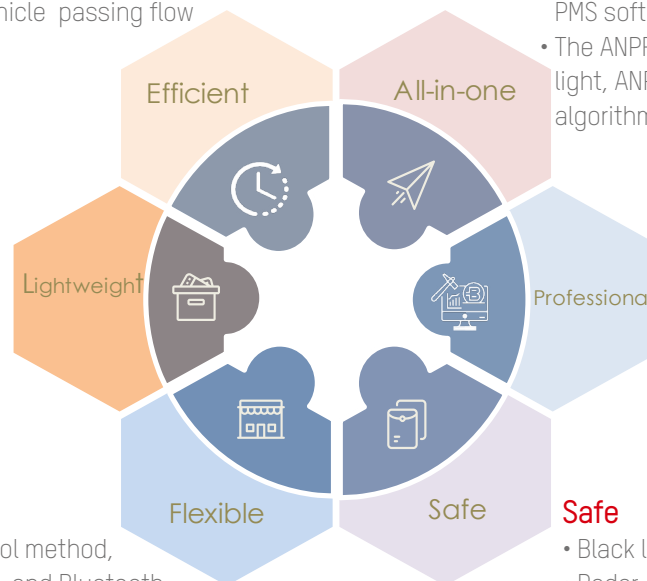
PRODUCT INTRODUCTION

DS-TCG227
ANPR Unit

- 2 MP, CMOS, 1920 x 1080, built-in LPR algorithm
- Integrated camera, housing, lens, power adaptor, supplement Lights
- Motorised lens
- Software one-key focus, easy debugging
- Built in whitelist, LPR identification support, barrier / gate control , audio output.

DS-TVL224-4-5Y
E&E Outdoor LED Display

- Four lines of text, LED outdoor Display
- Integrates with speaker
- LED Brightness: 1,200 cd
- Colours: Red, yellow, green
- Pixel Resolution: 64 x 64
- Dot Pitch: P4.75
- Dimensions: 364 x 484 x 60mm

DS-TPE104(2T)
Control Terminal

- 4 Channels of lane access
- 4 x 10/100 Mbps Ethernet ports, 2 x 1000 Mbps Ethernet ports, dual NICs
- 2 x RS485 ports, 3 x RS232 ports
- 4 x Relay ports support barrier / gate control
- 1 x audio output
- 2TB HDD included.

DS-TME401/402-TL-S
Entrance / Exit Controller

- Entrance, HDD not included
- Supports chat, no card output, support LED audio remind,
- Supports charging and accepting car when system offline.

TMG40X-XX
Barrier Gate

- Barrier type: high speed
- Lift-up speed: 1.6-2s
- Arm form: 3m,straight-arm
- Colour: red
- Arm moving direction: rightward
- Input power supply: 220V 50Hz
- Anti-failing.

DS-TMG033
Capture Trigger

- 2.4GHZ MMIC
- maximum trigger distance : 6m
- Beam width : Vertical 34°, Horizontal 12°
- Adjustable Detection Range
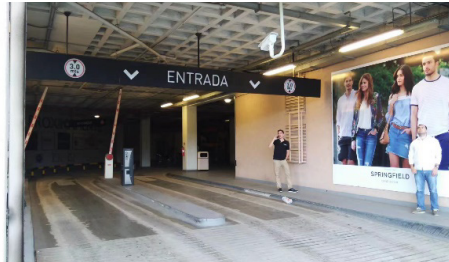- Distinguish the vehicle from pedestrian and only capture vehicle.

DS-TMG033
Anti-fall

- 2.4GHZ MMIC
- maximum trigger distance : 6m
- Beam width : Vertical 12°, Horizontal 34°
- Adjustable Detection Range
- Avoid fall accidents of both vehicles and pedestrians.

SUCCESS STORIES

The Parking Guidance Solution, Zabrze, Poland

HIKVISON's access control system provides the efficiency of access using video recognition to provide non-stop entrance & exit, replace manual entrance control with ANPR technique, automatic control enhances the efficiency.

Accurate LPR under a side entrance

Lane: Capture Time:2018-04-15   21:42:52.801 Plate No:WW649

Accurate LPR in dark conditions

Lane No:01 Capture Time:2018-04-15   21:53:50.368 Plate No:WW649

URBAN INTELLIGENCE
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12/2018