SMART PARKING MANAGEMENT SOLUTION

HIGHER EFFCIENCY UERS FRIENDLY EASY MANAGEMENT

PARKING MANAGEMENT CHALLENGES AND SOLUTION

Challenges

Entrance & Exit
Manual control
Stop for authorization
Low efficiency

Locating Vehicle
No statistics
Hard to find
Poor driver experience

Parking
No detection
No guidance
Management plight

Car Accident
No surveillance
No evidence
Burden of responsibility

How to address the challenges

How to improve entrance efficiency?
• Replace manual entrance control with ANPR technique.
• Automatic control enhances the efficiency.

How to make parking easy?
• Detect available space automatically.
• Display available numbers in each area on the screens.
• Guide driver to find available space.

How to help drivers locate their car?
• ANPR technique provides car license plates data.
• Display your car position on locating kiosk.

How to keep accident evidence?
• Provide comprehensive video surveillance in parking lot.
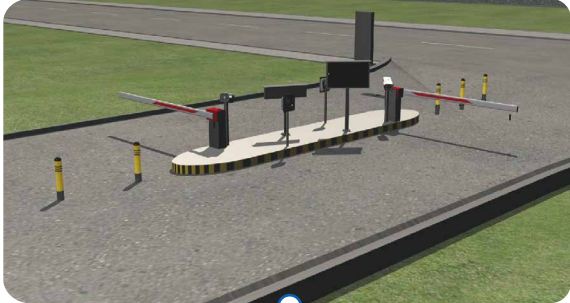• Rich parking log including data, image and video.
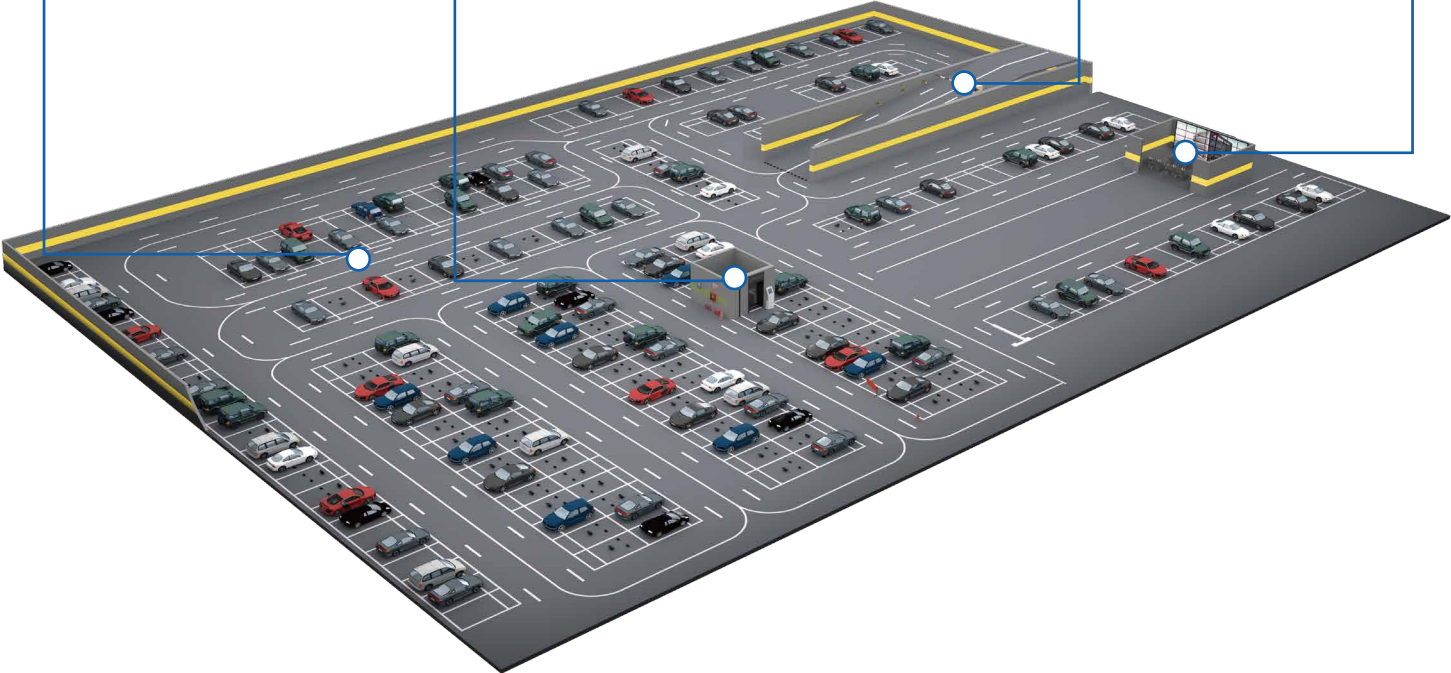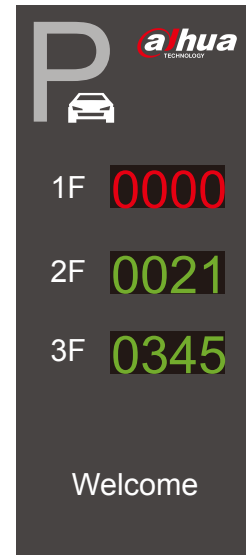
SOLUTION OVERVIEW

Parking Management

Parking Guidance

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↑020 → 054

Entrance & Exit

Car Locating

APPLICATION DETAILS

Entrance & Exit

P 🚗 **alhua** TECHNOLOGY

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2F	0021
3F	0345

Welcome
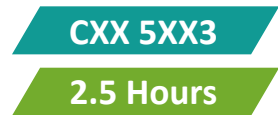
• Take in everything in a glance

Available number is counted by software and displayed on the outdoor screen (DHI-IPMPGI series). Multi-area display (max 6 areas) is supported. Before driving inside, drivers could see the available number clearly via the LED screen.

Info Screen would show the indication information for the driver when enter or exit.

WELCOME
CXX5XX3
2.5 Hours

CXX 5XX3

2.5 Hours

• No ticket and no stop

Vehicle access is controlled by ANPR Camera, without any tickets. It improves traffic flow with no delays.

ANPR Camera: Capture and recognize the vehicle plate, support video/loop detection and enable the barrier to open. Embedded with LPR algorithm, the camera could control barrier even when the management software is offline. Recognition rate ≥ 95%.

• There is always a way in and out

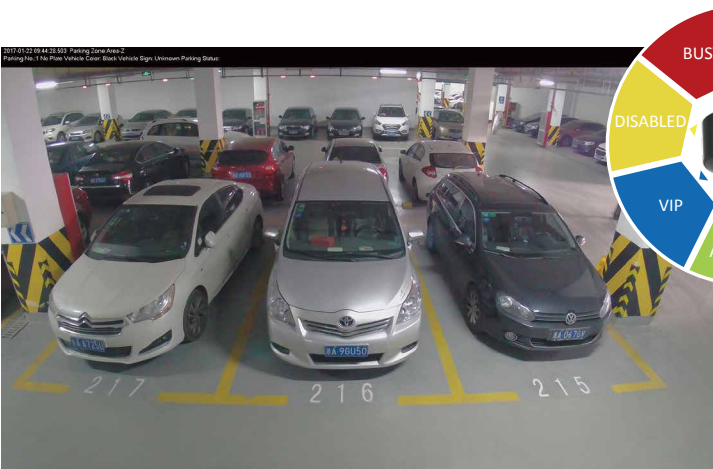Call to administration center via VTO while abnormal situation occurs or visitors come.

• Flexible setting of access authorization

Black/White List setting. Flexible template with plate, time, lane-channel and etc.

Parking Guidance

• Parking space guidance

Indoor screen (DHI-IPMPGI series) shows the numbers of available parking space at every direction, which could guide the driver to the available parking space efficiently. Parking light which is integrated with spot camera gives a visual guidance of the parking space by colour.

• No space to be hidden

Spot camera can automatically identify the current status of the parking space, and provide the car plate information to management center.
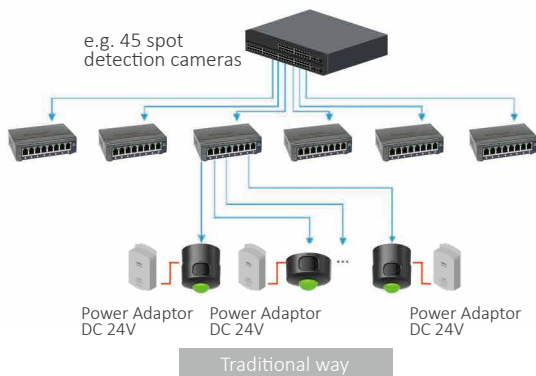
At the same time, it could provide real time video stream to the administration center for security monitoring and evidence preservation. Furthermore，the built-in seven-color indicator light can indicate different kinds of parking spaces obviously by colors.
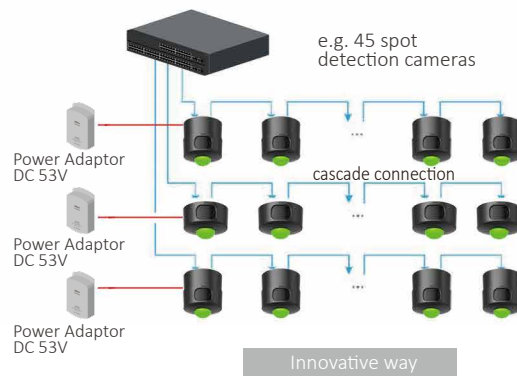
Easy Deployment & Cost Down

Power via Ethernet (PvE):

Only the first device needs to access the wire and power cord, and the other connected devices can be powered by Ethernet cable.

• Up to 6 dual-lens cameras or 10 single lens cameras can be connected in series connection.
• Reduce UTP cable deployment and cost (83%) .
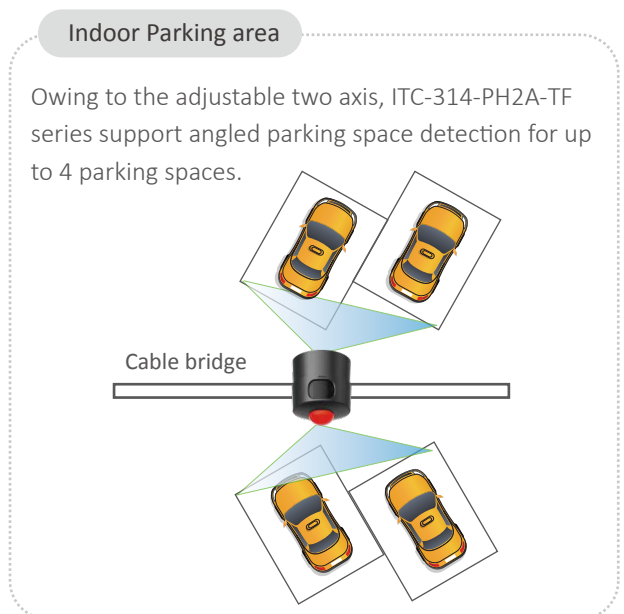• Reduce the quan es of switches.
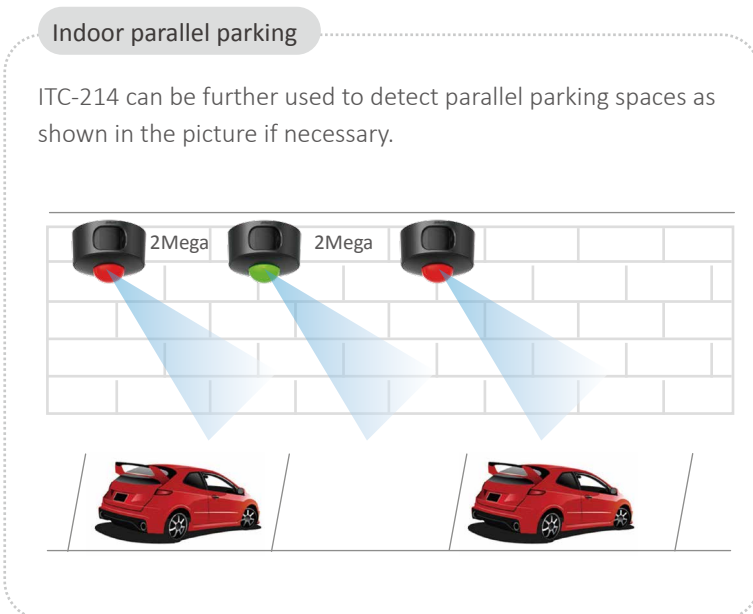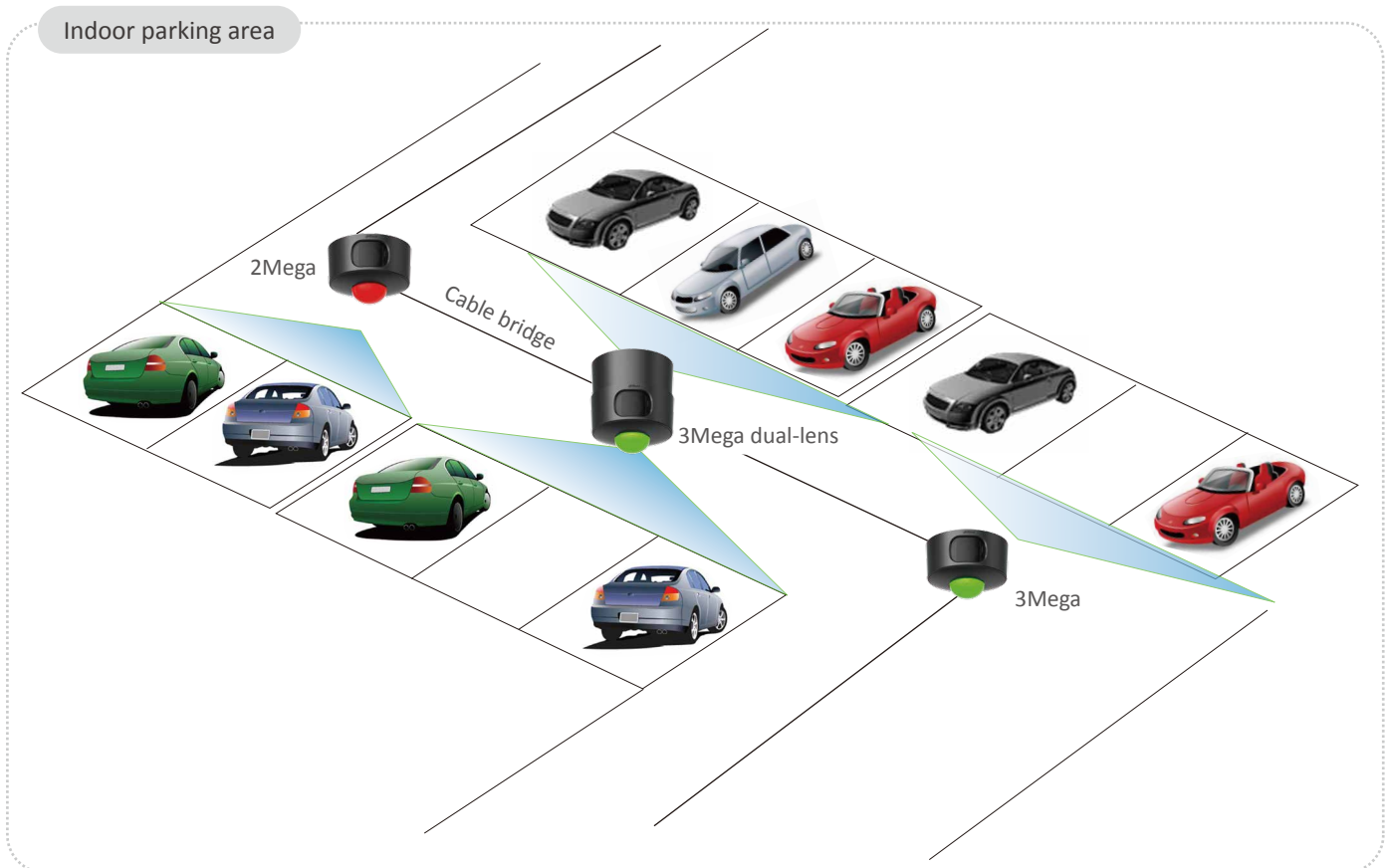• Reduce the power cable.
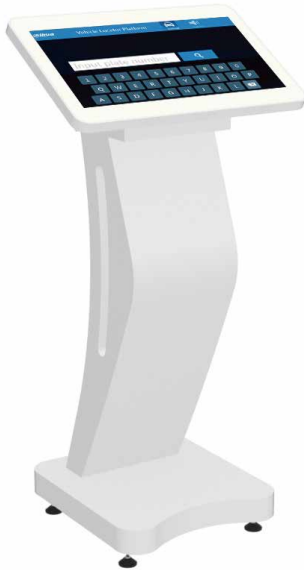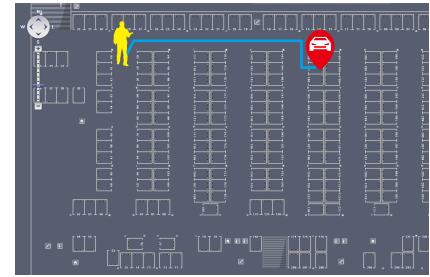• Reduce the cost of cable tray (63%) .

Flexible spot detecting choices

• Different parking scenes have cost-effective solutions respectively.

• 2Mega spot camera could detect two parking spaces. 3Mega spot camera could detect three parking spaces.

• 3Mega dual-lens spot camera could even detect six parking spaces, which could save over 25% of the cost for every parking space.

Indoor parking area

2Mega

Cable bridge

3Mega dual-lens

3Mega

Indoor parallel parking

ITC-214 can be further used to detect parallel parking spaces as shown in the picture if necessary.

2Mega   2Mega

Indoor Parking area

Owing to the adjustable two axis, ITC-314-PH2A-TF series support angled parking space detection for up to 4 parking spaces.

Cable bridge

Car Locating

Car locating kiosk with touch screen makes it easy to find your car. Fuzzy search of license plate, confirm the vehicle image and its position. Furthermore, it could show the best path from kiosk to your car.

Parking Management

- **Easy-to-use platform**

  Special design for parking management. Visual interface and operation, based on maps.

- **Comprehensive surveillance**

  Car accident and property theft in parking lot make quite troubles for parking lot manager, as lack of evidences causes disputes. High definition video preview and record can be provided by access cameras and space detection cameras. Parking lot manager could help customers to find the video evidences of accident and unearth the incidents, which would benefit both the parking lot manager and customers.

- **Intercom handling**
  Response to visitor or emergency call by VTO.

- **Remote management**
  Modify the vehicle information remotely. Control the barrier remotely.

- **Smart search**
  Search the video and image by date/time/license plate.

- **Parking log**
  Rich parking, entry and exit history log, including vehicle picture, license plate, parking space number, time information and etc.
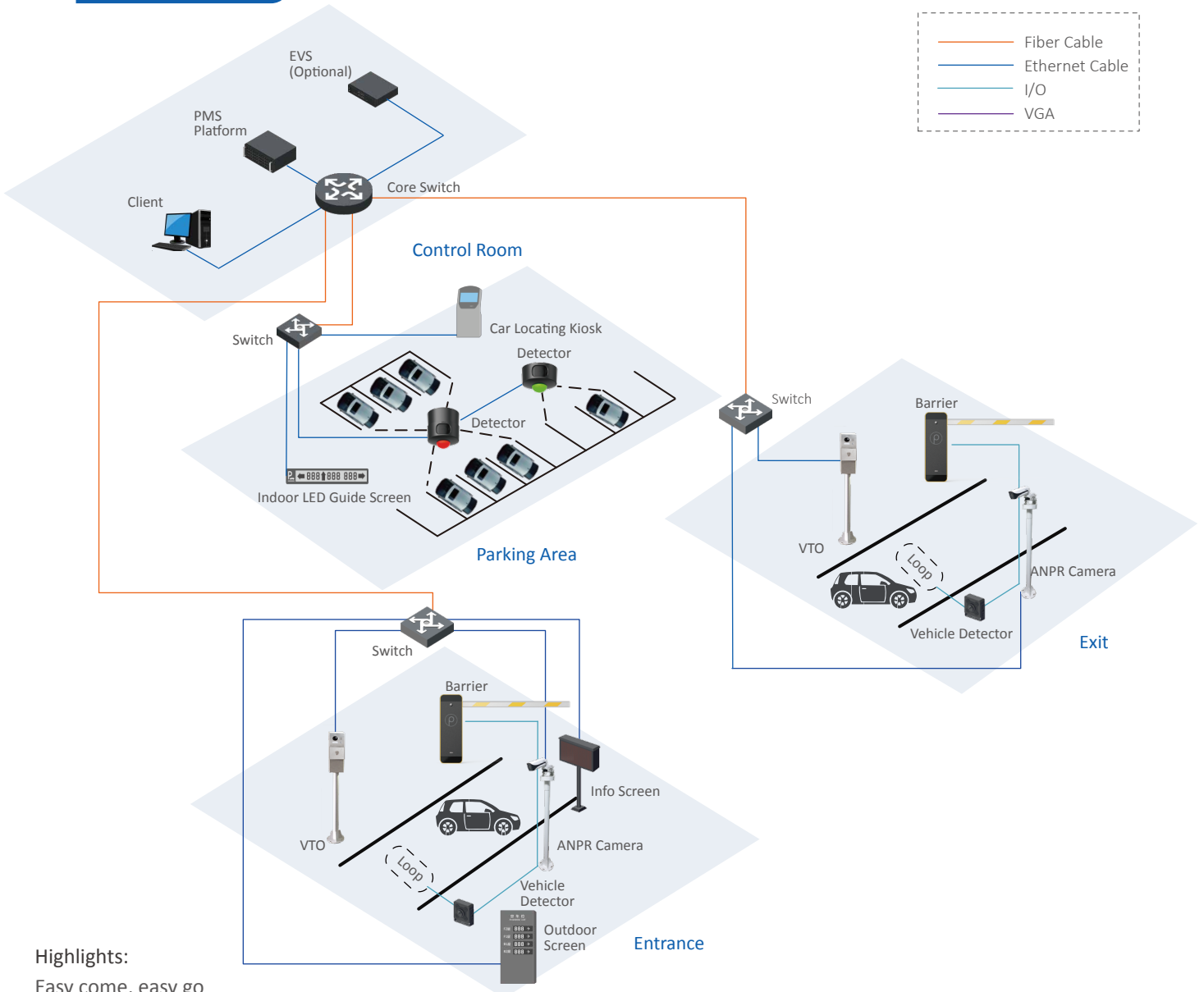
VIP Services

Reservation & VIP parking services

- **Reservation services:** making reservation of important customers conveniently.

- **VIP parking services:** guarding VIP reserved parking space, special indicator colour for VIP parking space.

- **Illegal occupation warning:** If reserved or special parking place is occupied illegally, there would be a warning for the administrator.

SOLUTION STRUCTURE & TOPOLOGY

EVS (Optional)

PMS Platform

Client

Core Switch

Control Room

Switch

Car Locating Kiosk

Detector

Detector

Indoor LED Guide Screen

Parking Area

Switch

Barrier

VTO

Loop

ANPR Camera

Vehicle Detector

Exit

Switch

Barrier

VTO

Info Screen

Loop

ANPR Camera

Vehicle Detector

Outdoor Screen

Entrance

Fiber Cable
Ethernet Cable
I/O
VGA

Highlights:

Easy come, easy go

- Help you find available parking space.
- Locate your car and pay to leave conveniently.

ANPR, video or loop trigger optional

- Offer more economical choice.
- Recognition rate higher than 95%.

Comprehensive surveillance

- Provide 7×24 surveillance with access camera and spot detection camera.
- Search the video record and image by date/time/license plate number.

Networking management

- Support centralized networking management of multiple parking areas and parking lots.

Open system

- Open system with rich interfaces, to meet different customer requirements. Easy integration with 3rd party payment system.

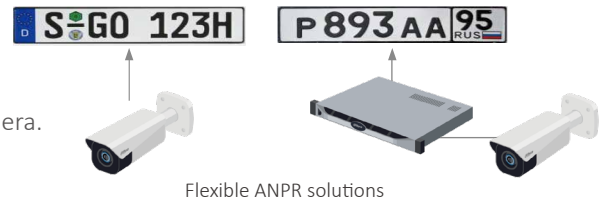# KEY TECHNOLOGY

Powerful Algorithm

Convenient entrance & exit with camera embedded ANPR
- Efficiency ANPR, complete plate recognition in less than 1 second.
- Video stream or image transferring is not required, less time consumption.
- Individual server for ANPR is not required, reduce the cost of server.
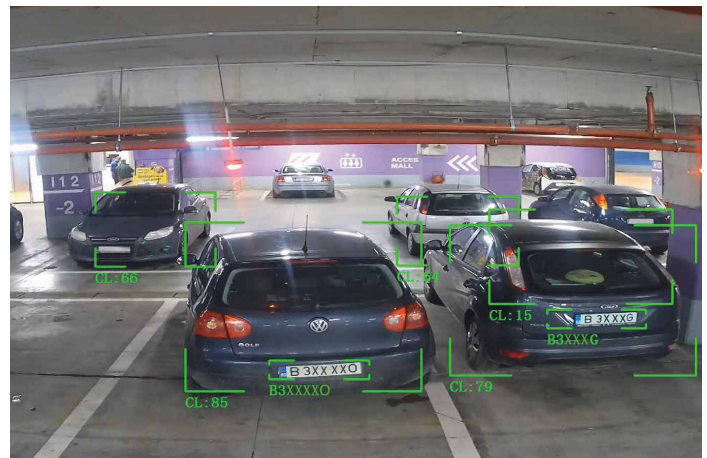- More stable, even if the network is offline, ANPR would not be influenced.

Economic space detection
- Efficiency ANPR makes spot camera multi-function.
- Multi-space coverage, up to 3 space per lens and 6 space per camera.
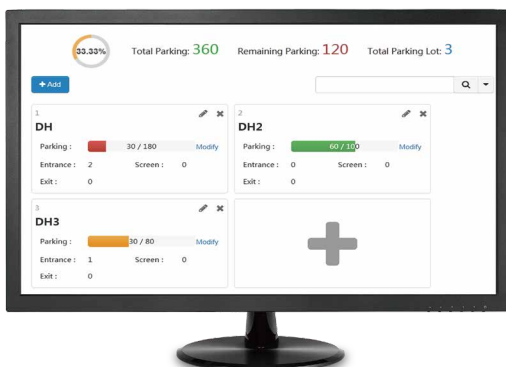- ANPR provides key information for vehicle locating.

Flexible ANPR solutions

High Accuracy Vehicle Shape Detection Algorithm
- Latest deep learning vehicle shape detection algorithm applied.
- Detection based on Vehicle Shape, whether there is a license plate (such as the license plate is covered by snow, mud, etc.).
- Parking status results less affected by other objects, such as passerby.
- Vehicle Detection rate higher than 99%.

Professional Management Platform

Special designed for parking management
- Based on map, easy-to-use visual interface.
- Professional functions, like reservation and VIP parking.
- Rich parking data, open for management and analysis.
- Improve management efficiency and reduce labour costs.

PRODUCT SHOWCASE

DHI-ITC237-PW1B-IRZ

- 1/2.8" 2MP progressive scan, CMOS
- H.265
- 50/60fps@1080 (1920×1080)
- Intelligence: Video&Loop detection and recognize the license plate
- WDR (140dB), 3D-DNR
- 2/1 Alarm in/out
- License plate detection Range 3-8m

DHI-VTO2000A

- 1/4" 1MP CMOS, 2.8mm
- Audio Compression: G.711
- Audio Input: Omnidirectional Mic
- Audio Output: Built-in Speaker
- Keypad: Single Mechanical Button
- Ethernet: 10M/100Mbps Self-adaptive
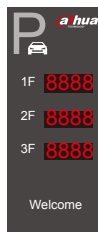- Ingress Protection: IP54, IK07
- Power: DC 12V

DHI-IPMECD-2020B-R/L

- Speed: 1 second (pole ≤4m), 2 second (pole>4m)
- Unlock automatically and raise the arm manually as power off
- Radar sensor to prevent head-on collisions without using a traditional anti-hit loop
- The machine case uses advanced waterproof structure and anti-aging outer covering
- Anti-impact design supports horizontal open under vehicle impact

DHI-IPMECP-248AA

- LED type: SMD 1R1G
- Pixel Resolution: 64*64 Point
- Color: Red, yellow, green
- Display dimension: 304*304mm
- Brightness: ≥3000 Nits

DHI-IPMPGI Outdoor Serise

- Providing six layers LED display
- Red/Yellow/Green tricolor display
- Modular design, easy to maintain
- 1 RS485 port and 100Mb Ethernet port
- Providing SDK Tool for third-party management platform integration
- Meet the ROHS and CE certifications

PRODUCT SHOWCASE

DHI-ITC-314-PH2A-TF2

reddot award 2018 winner

- Red Dot Design Award Winner 2018
- 3Mega dual-lens parking space detector
- 3Mega 1/2.8"inch CMOS, 0.01lux min illumination
- Dual-Lens design, simultaneously detect 6 spaces
- Indicator supports at least 7 colors
- Interactive design with parking space indicator
- In-ceiling installation
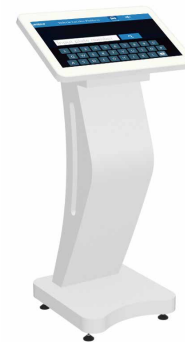- Support dual stream output of JPEG and H.264, 1~20fps adjustable

DHI-ITC314-PH2A

- 3Mega parking space detector
- 3 Mega Pixel 1/2.8"inch CMOS, 0.01lux min illumination
- Simultaneously detect 3 spaces
- Indicator supports at least 7 colors
- Interactive design with parking space indicator
- In-ceiling installation
- Unique dual-streaming insure high quality photo output and video output

DHI-IPMPGI-1X0AC Series

- Providing three directions of arrow indication
- Red/Green bicolor display
- Up to 3 arrows & 9 digits number display
- 2 RS485 Ports and 100Mb Ethernet port
- Providing SDK Tool for third-party management platform integration
- Meet the ROHS and CE certifications

DHI-IPMPGS-221A

- 19 inch, 4:3 standard touch screen
- Support locating the vehicle position within plate number
- Show the location of vehicle and route from kiosk to destination in map

DHI-PMS

- Special designed for parking management
- Simple deployment, one-key upgrade
- Safe and stable, high reliable
- Open system, good compatibility
- Distribution deployment, easy expansion
- Hot standby, high innovation
- Power performance, economical choice

DHI-EVS7024S-R

- Intel Processor
- Max 768 IP Camera Inputs
- Max 1536Mbps Incoming/recording Bandwidth
- 24 HDDs, SAS/SATA, Hot-Swap
- Supports RAID 0/1/3/4/5/6/10/50/60/JBOD, Hotspare
- iSCSI and Mini SAS for Expanded Storage Space
- Support standard iSCSI Protocol Storage
- Modular&Cableless Design
- Redundant Power

PRODUCT OVERVIEW

Product	Description	Entrance & Exit	Parking Guidance	Car Locating	Parking Management
DHI-ITC237-PW1B-IRZ	2 Megapixel Full HD Access ANPR Camera	●			
DHI-VTO2000A	Outdoor Video Intercom	●			
DHI-IPMECD Series	Automatic Barrier	●			
DHI-IPMECP Series	Outdoor LED Screen	●			
DHI-IPMPGI-2x1AA Series	Outdoor LED Screen	●			
DHI-ITC314-PH2A	3Mega Parking Space Detection Camera (Single-Len)		●		
DHI-ITC314-PH2A-TF2	3Mega Parking Space Detection Camera (Dual-Lens)		●		
DHI-IPMPGI-AC	Indoor LED Guidance Screen		●		
DHI-IPMPGS-221A	Car Locating Kiosk			●	
DHI-PMS	Professional Parking Management System				●
DHI-EVS7024S-R	24-HDD Enterprise Video Storage				●

SUCCESS CASE

Czech Republic Shopping Mall

Large commercial shopping mall. Dahua parking manage- ment solution offers diversified services. Parking guidance system helps customers find available parking spaces quickly, find my car system ensures the vehicle can be found, provide first class user experience and management efficiency.

- 1200 parking spaces
- 400 detection cameras, 25 guidance screens, 1 car locating kiosks

Commercial Building of Mongolia

Complex commercial building in Ulan Bator, includes banks, restaurants and retails. Dahua parking management solution has promoted the efficiency of entrance & exit. Parking guidance and car locating system let the customers have a better parking experience. Custom-made charge rules of parking fee improve the management level of parking lot.

- 500 parking spaces
- 120 detection cameras, 4 ANPR cameras, 8 guidance screens

Serbia Residence Community

High-end residential area, Dahua parking management solution offer Entrance & Exit control and private space management (VIP Management). System control Entrance & Exit by ANPR white list. Provide 24*7hours video record in the parking.

- 400 parking spaces, 4 Entrance & Exit.
- 115 detection cameras, 4 access ANPR cameras and VTOs

Contact us

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