

# INNOVATIVE, SECURE & EFFICIENT PARKING WITH VIDEO PROTECTION

Hikvision's Intelligent Parking Solutions

**HIKVISION**<sup>®</sup>

# Solution Overview

In a crowded marketplace, thousands of retail companies, private businesses and public authorities offer parking facilities. However, the rising costs of property and land means successful parking businesses must strive to make the most economical use of their lots. Therefore the effective management of every square inch of available parking space is an increasing priority.

In fact, drivers are hard to find a free space conveniently in the enormous parking lot. Even car park operators are always complaining about the low utilization of spaces. Both sides are suffering from the dilemma. Car park operators and drivers have this in common: they want parking to be easy, secure, and efficient.

Hikvision offers solutions to guide drivers to a free space quickly, with products that can be easily combined and integrated for various scenarios, including entrance and exit, off-street parking, on-street parking, open-air parking, and parking data analysis. Streamlining parking, both at entrances and exits and through the car park, makes operations much more efficient, speeding up the process and potentially freeing up spaces more quickly for further occupation. This means maximizing profits on spaces. It also provides extra layers of security, giving peace of mind to drivers and operators alike.



On-street Parking



Off-street parking



Entrance & Exit



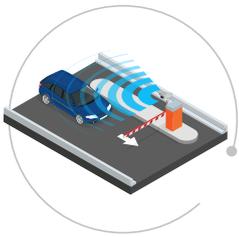
Open-air Parking

PARKING

8'6" CLEARANCE 8'6"

# Entrance & Exit Management

Hikvision offers non-stop entry and exit experience with authorized license plates to boost access efficiency. Also, it supports personalized payment rule configuration for more flexible operation. For scenario without an attendant booth, the barrier gate can be controlled remotely from the management center for efficiency.



**Vehicle Detection**

Radar precisely detects vehicles to trigger the system. Then, ANPR cameras capture plate characters with high accuracy.



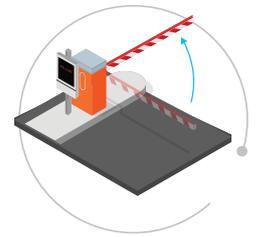
**Passing Vehicle Record**

Vehicle information will be recorded, such as, license info, snapshot and video footage, and compared with block-list / allow-list to trigger notification.



**Parking Information Display**

A parking screen can display customizable content for efficient operations, such as date & time, welcome message, space status, and ANPR results.



**Quick, Intelligent Barrier**

With precise radar, the boom pole can rise quickly and lower slowly for a safe and comfortable entry or exit.

**All-in-One Entrance & Exit Manager**



**All-in-One Design**

Integrated with various functional devices, including a fast barrier gate, smart capture camera, supplemental lighting, LCD display, emergency button, voice prompt, and two-way audio, this all-in-one unit makes wiring and debugging simple and convenient.

**Quick Pass**

This E&E device integrates with a geared barrier gate, which features high efficiency and stable performance. The boom pole can be set to rise quickly but lower more slowly; this provides both a quick and safe passage for drivers.

**Intelligent Vehicle Recognition**

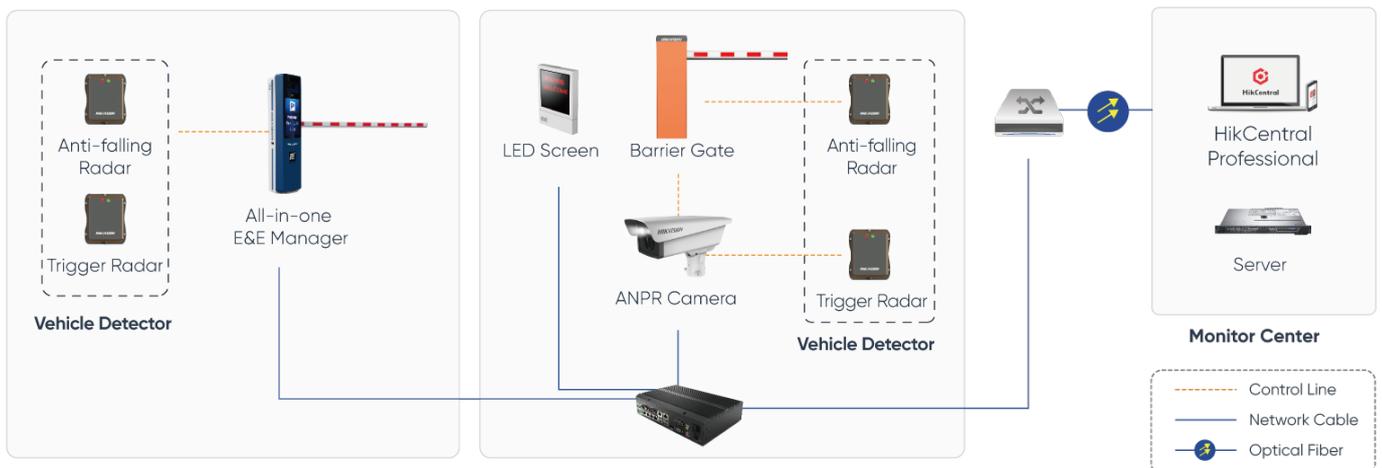
With high quality imaging, 4 MP HD cameras support intelligent recognition for vehicle license plates, color, type, and manufacturer. The unit captures vehicle information for security staff with more efficient operation and better use of resources.

**User-Friendly Display**

The 21.5-inch LCD provides convenient access management by showing QR codes for vehicles without license plates to scan. Moreover, it can also display images, video footage, and advertisements.



**Solution Topology**



# Off-street parking

Hikvision's intelligent parking solution provides full-cycle visual guidance for off-street parking scenarios, such as shopping malls, office buildings, industry parks, etc. With a systemic solution, including parking guidance, free space detection, and car locating. Hikvision empowers more security, efficiency, and profitability to your parking operation.

## Application Scenarios



Shopping Malls



Parking Structures



Office Buildings

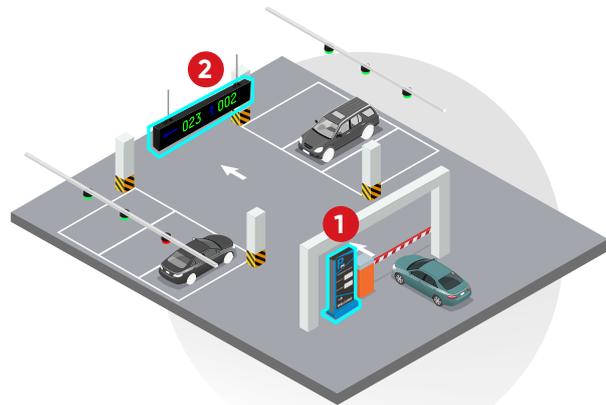


Industrial Parks

## Parking Guidance

The intelligent parking guidance system can provide an intuitive indication for efficient parking. It takes the data from parking guidance cameras, and shows the numbers and locations of all available space on outdoor and indoor display screens.

Indoor screens display arrows alongside the count, showing how many spaces are in a certain area. They give drivers further direction on how to get to free spaces, making navigating large car parks less stressful. For VIP or other reserved parking spaces, alarms will be triggered when they are occupied.



### Outdoor Guidance Display

- Displaying space vacancy by floor number & section



### Indoor Guidance Display

- Multi-color display of directions and numbers
- Special parking icons appear, such as Accessible Parking

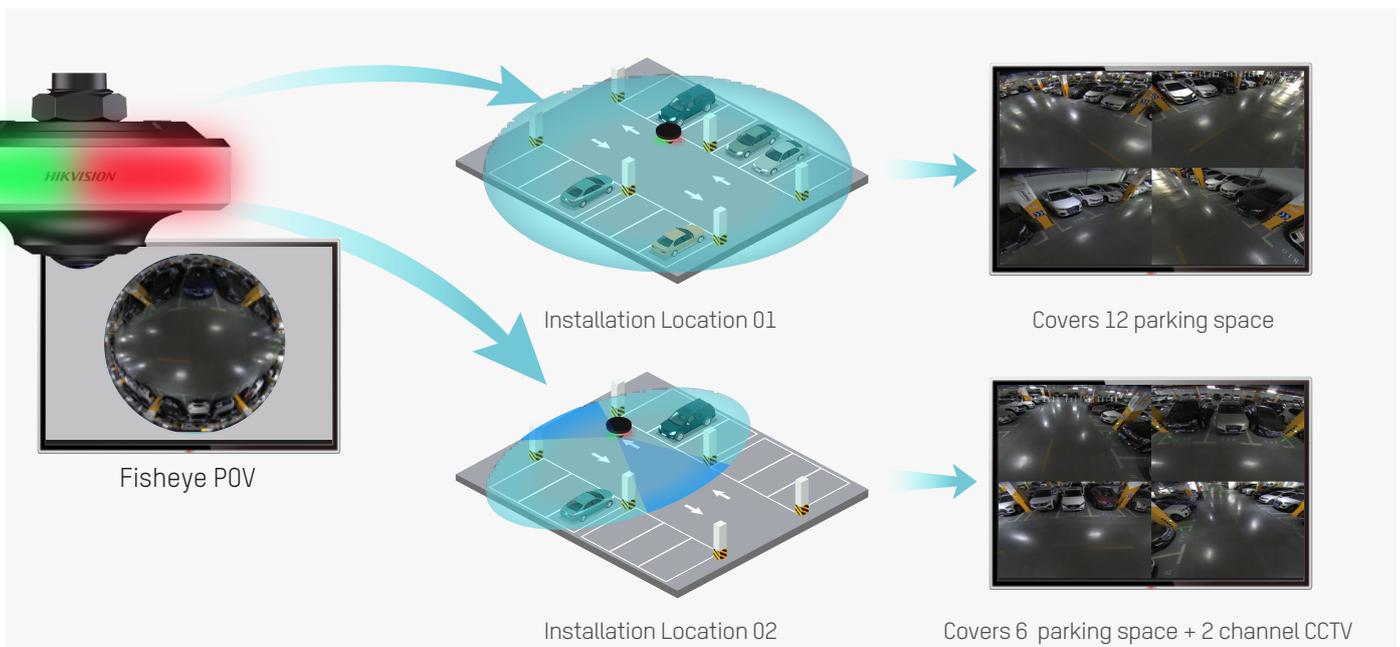
## Free Space Detection

The intelligent parking guidance system can detect the free space intelligently combined with parking guidance camera and fisheye parking camera. By detecting the real-time space status, drivers and operators can obtain a clear map in mind to find the available space quickly and manage the parking lot more efficiently.

### Fisheye parking camera

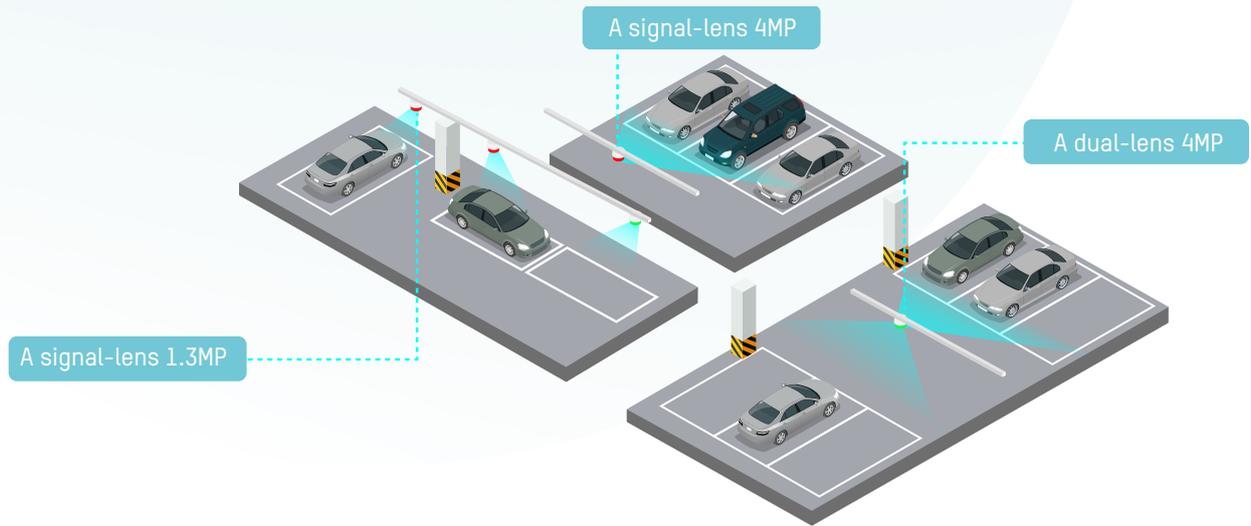
Fisheye parking cameras are used primarily in underground parking areas. They employ high-definition, progressive scan CMOS sensors and feature high-quality, low-illumination imaging, high framerates, vivid color rendition, and more.

Built-in deep-learning algorithms in parking space detection provide motion detection and other smart detection functions. Precise indoor parking space detection helps drivers quickly find their vehicle when departing.



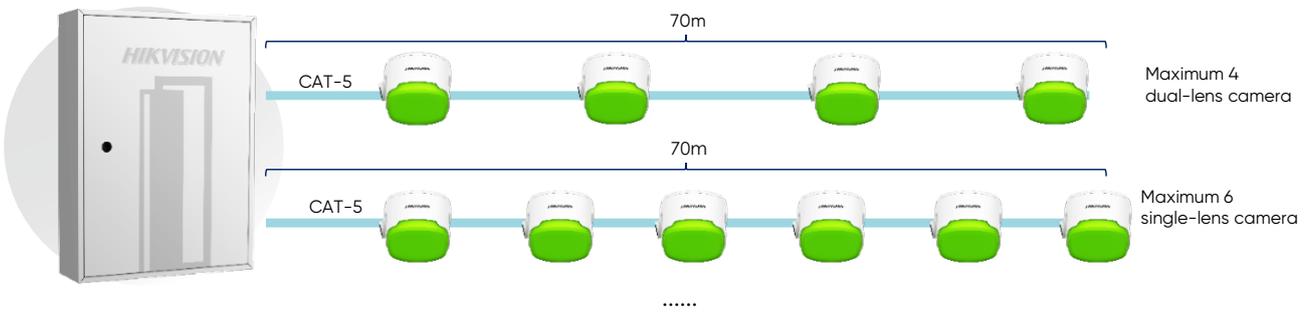
### Parking guidance camera

Equipped with deep learning algorithms and video monitoring technology, the parking guidance cameras show the real-time status on parking space availability with colored lights, reducing search times and creating an experience where drivers always find a free parking space quickly. Moreover, each color can also be used to categorize spaces, such as disabled parking.

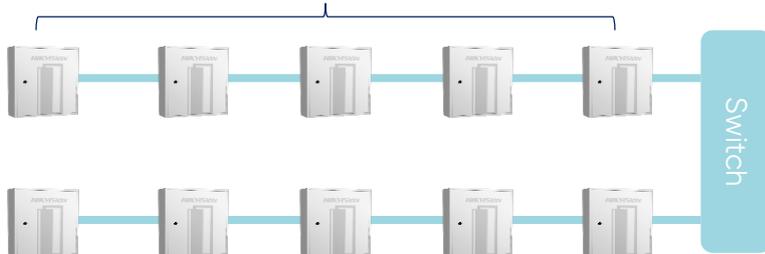


### Easy Deployment & Smart Networking for Less

- The Parking Guidance Terminal provides power and network access for up to 32 nearby cameras as well as edge storage for video and images.
- This model can reduce the quantity of switches needed and reduce the cost of cabling (by up to 63%).



Maximum cascade connection:5



- Parking management terminals support up to 5 cascades to reduce construction wiring costs and number of switch ports.

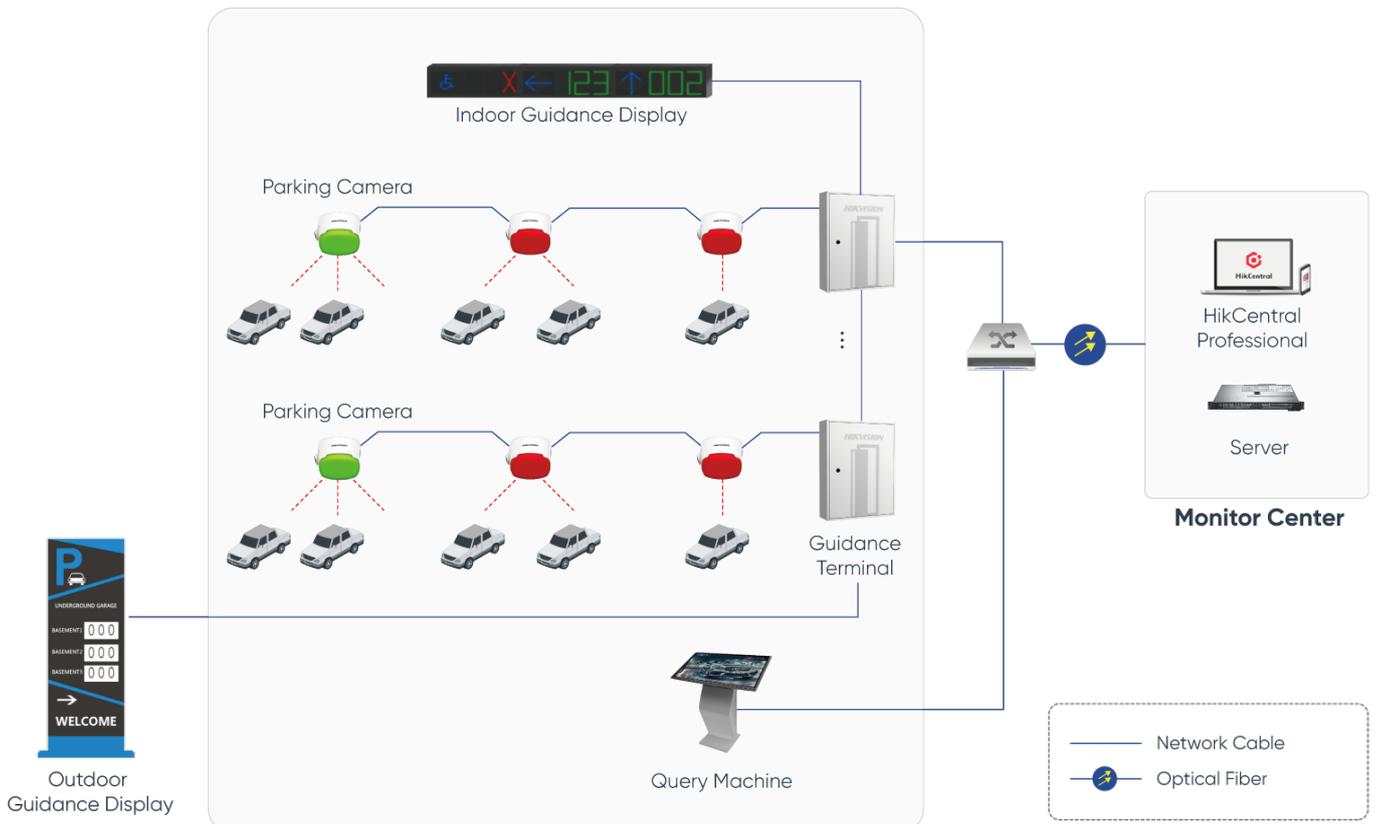
## Car Locating

The parking system can help drivers locate their vehicles easily by simply entering their plate number in full or in part. A display screen will show the quickest way to the exclusive vehicle. No more getting lost in a large parking garage!

With Query Kiosk touchscreen, drivers only need to enter their license plate number to see the space and how to get there. The machine picks up their license plate number from the ANPR data through the Parking Guidance Camera, coordinated by HikCentral Professional.



## Solution Topology



# On-street parking

Hikvision offers critical assistance for on-street parking with two intelligent cameras, detecting status and collecting car parking information. These cameras can record the whole parking process with chain of evidence for dodging tolls to improving efficiency and fee collection.



## Vehicle Drive-In



- Automated departure detection
- License plate recognition and space number detection
- Image recording of driving process

## Vehicle Drive-Out



## Upload to Hikcentral Professional

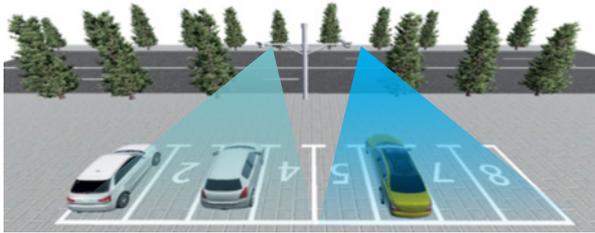
- Parking time, license plate number, parking space number, and occupancy of vehicles will be recorded and uploaded to the HikCentral Professional platform

## On-street Parking Bullet Camera

The on-street parking bullet camera uses advanced image recognition technology to provide more accurate parking information, reduce manual intervention, and enhance drivers' self-service experience. When needed, video records can provide complete parking details, such as vehicle number plates, vehicle entry and exit times, images, and videos – a great help in improving parking efficiency and building smart cities.

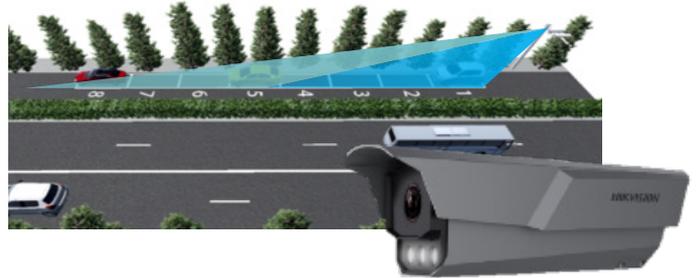
### Roadside Parking

E Shape, Double-row, 90°-



### Roadside Parking

I Shape, Single-row



## On-street ANPR Pole

An on-street ANPR pole combined with a bullet camera can cover blind areas, supporting vehicle entrance and exit detection, and license plate recognition.

In a situation where the plate color of an electric vehicle is distinguished from that of a gas/petrol-fueled vehicle, this on-street ANPR pole proves its worth. It can recognize whether the vehicle is electric or not, linking with parking locks to manage parking spaces reserved for alternative-fuel vehicles.

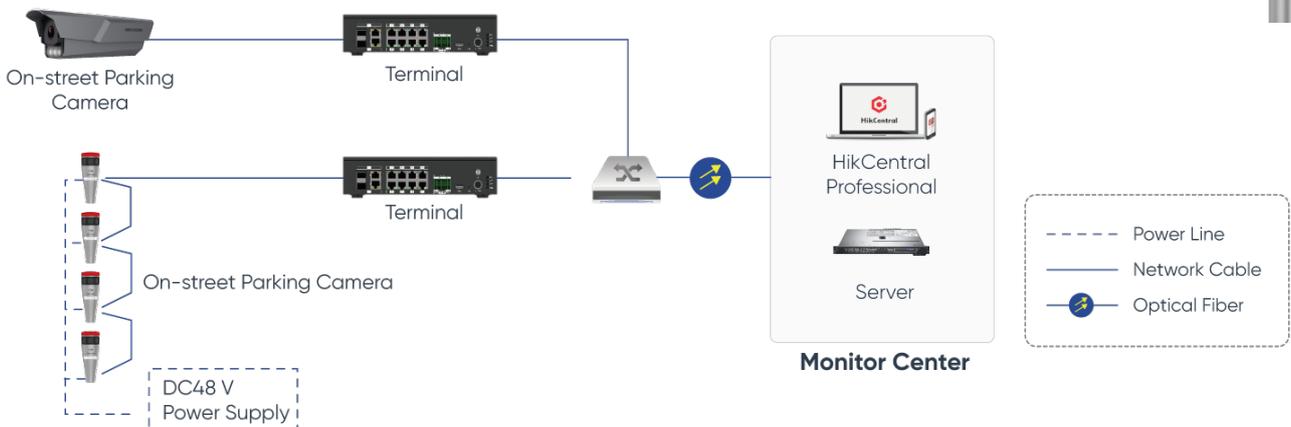
### Single-row, roadside parking



### Double-row, 90°-aisle parking



## Solution Topology



# Open-air Parking

For open-air parking, Hikvision provides drivers with a smooth parking experience with real-time detection of free parking spaces and parking space occupation. Automatically calculating parking times and real-time display of free parking information, operators can enjoy much more efficient management with a low margin of error.

## Application Scenarios



Industrial Parks



Tourism



Open-air city parking



Campuses



Hospitals



**Outdoor Guidance Display**

Displays available parking spaces in each region



**Indoor Guidance Display**

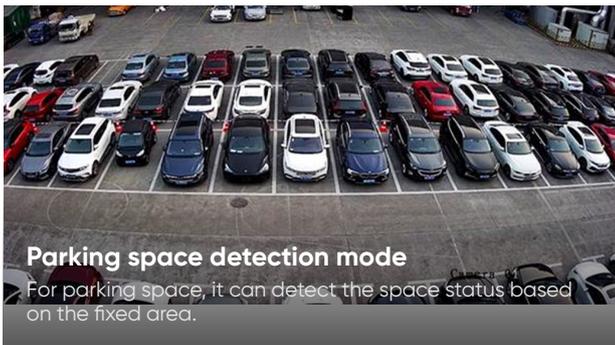
Displays the available parking spaces in each direction



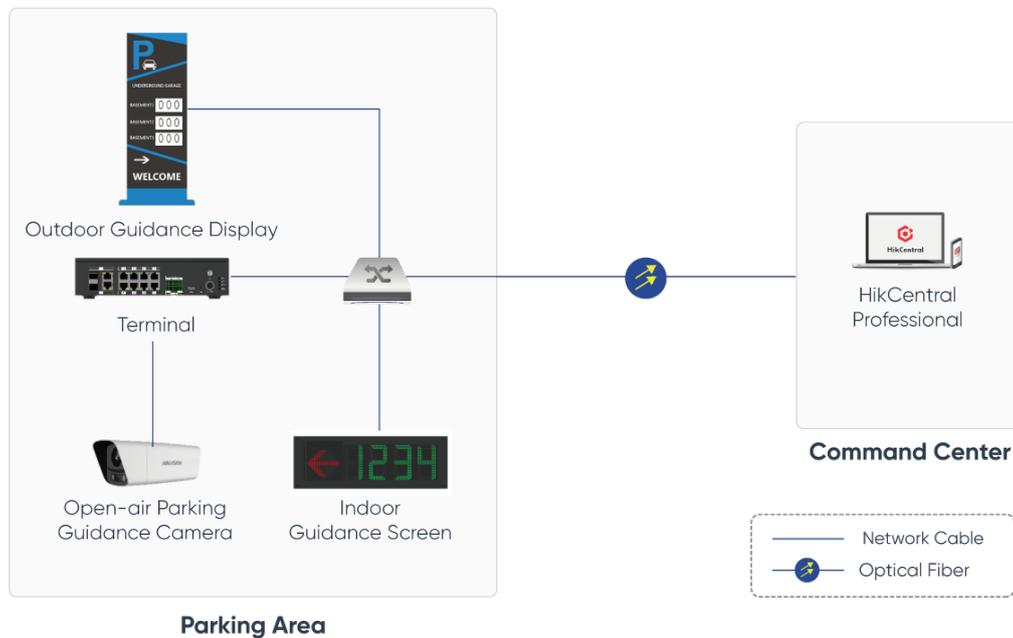
**Parking Space Detection Camera**

Detection of free parking spaces

The parking space detection camera provides two detection methods to suit various scenarios.



Solution Topology



# Parking Data Analysis



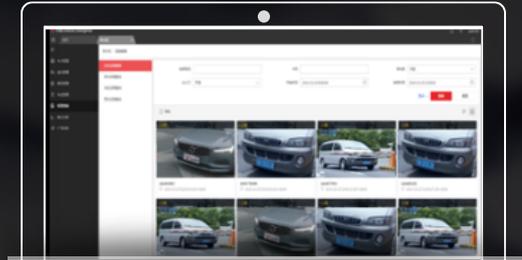
Hikvision supports intelligent parking data analysis and video monitoring with HikCentral Professional, enhancing parking operation efficiency and security. Various alarms – unauthorized parking, over-time parking, space occupation, etc. – are detected in real time. In addition, the cameras can record evidence to handle disputes and emergencies.

Operators can maximize their efficiency and returns using management statistics, such as detailed entry and exit records, statistics on vehicle flow, space utilization, and more. Space status and availability numbers can also be manually adjusted.



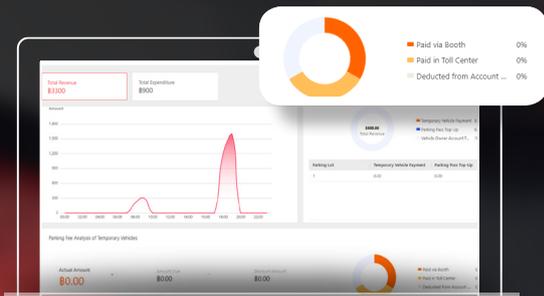
### Handling Incidents

Auto alarm pop-ups to PC clients or PUSH notifications on the mobile app for quick response



### Record Retrieval

Vehicle record queries using license plates, dates, times, E&E direction, vehicle color, & brand for efficient management



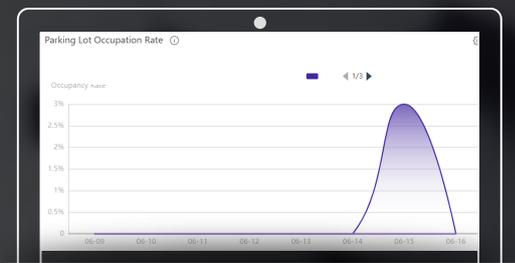
### Parking Fee Analysis

Analyze parking fees at different parking lots and payment methods for optimization



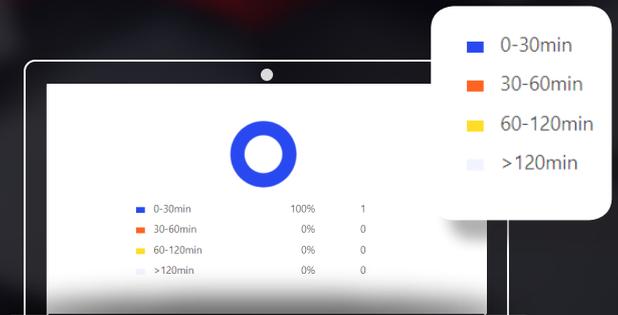
### Traffic Flow

Analyze traffic flow to discover operation status in multiple parking lots, including average flow, peak times, etc.



### Occupation Rates

Occupation rate analysis improves utilization and increases profits



### Parking Duration

Analyze parking durations to adjust fees and manage ROI

# Recommended Products



## DS-TCG405-E

E&E Capture Unit

- 4 MP, 2688 × 1520 @ 25 fps
- Deep-learning algorithm,
- 30,000 blacklists/whitelists
- 3.1 - 6 mm motorized lens
- ANPR, vehicle type recognition, vehicle brand recognition, vehicle color recognition
- White-light / IR light switching
- IP67, IK10



## DS-TMC407-EHL/R

E&E Capture Unit

- Barrier Gate: Straight arm: 3 / 4 m (extensible); 90° Crank-arm: 2+2 m
- ANPR Camera: 4 MP, 2688 × 1520, CMOS, 1/1.8", 25 fps, 3.1 - 6 mm lens
- LCD Screen: 21.5-inch, 1080p, 1500cd/m<sup>2</sup>, supports QR codes and advertisement display
- LED Lighting: Embedded with 9 high-performance IR LEDs



## DS-TMG034

Capture-trigger

- 796Hz MMIC
- The maximum trigger distance: 6 m
- Adjustable Detection Range
- Distinguishes vehicles from pedestrians and only captures vehicles



## DS-TMG034

Anti-fall

- 79 GHz MMIC
- The maximum Trigger distance : 6m
- Adjustable Detection Range
- Detects and prevents falling of vehicle and pedestrian



## DS-TVL224-4-5Y

Access Outdoor LED Display

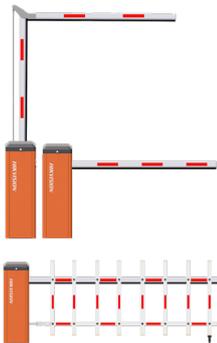
- Four lines of text, LED outdoor Display
- Integrates with speaker
- LED Brightness: 1,200 cd
- Colors: Red, yellow, green
- Supports global language display
- Pixel Resolution: 64 x 64
- Dimensions: 364 x 484 x 60 mm



## DS-TPE104

E&E Control Terminal

- Four Channels of lane access
- Four 10/100 Mbps Ethernet ports, two 1000 Mbps Ethernet ports, dual NICs
- Two RS485 ports, three RS232 ports
- Two relay ports support barrier / gate control
- Single audio output
- 2 TB HDD included



**DS-TMG52X Series**

Vehicle Barrier

- Straight / curved / fence boom post
- Variable-frequency boom barrier
- Lift speed (seconds): 0.6 - 1.5 / 0.9 - 2.0 / 1.5 - 2.5
- Color: Orange
- Anti-fall, riding priority
- IP54
- Operating Temperature: -30 to 70 °C
- Consumption: 300 W
- Power Supply: 110 / 220 VAC



**DS-TCPX40-(D)B(E)**

Guidance Camera

- HD 1.3MP / 4MP camera, single / dual lens options
- Integrated with indicator light; up to 7 colors can be configured
- Covers 1 – 6 parking bays
- Built-in iBeacon module
- Three external lights can be extended
- Hikvision POE cabling



**DS-TPM400-P(3T/6T/18T)**

Guidance Terminal

- Accesses up to 32 guidance cameras
- Integrates power supply, cabinet, storage and switch
- Wall-mounted design provides flexible camera access
- Video and image storage, 6 HDD bays



**DS-TCPC06-EP  
DS-TCP506-EP**

12MP/5MP Fisheye Parking Camera

- Resolutin: 2688\*1944(5MP), 4000\*3000(12MP)
- Adopts ultra wide-angle lens for 360°monitoring
- Supports multiple output modes, including the fisheye, dual-channel calibration and 4-channel calibration
- Support standard PoE
- Supports motion detection



**DS-TPW332-C**

Query Terminal

- Resolution:1920 x 1080, 31.5-inch screen
- Brightness: 300cd/m2
- Contrast: 1000:1
- Supports infrared 10-point touch, touch resolution up to 32,768 x 32,768, response time less than 20 ms
- Query vehicle parking location using license plate number, parking space number, parking time, and other data

\*Including wall mounting bracket



**DS-TVL121-3-5D  
DS-TVL121-6-5D  
DS-TVL121-9-5D**

Indoor Guidance Display

- Indoor one-, two-, or three-direction indicator
- Triple-color display
- Supports RS-485 and Network Transmission



### DS-TVB200

#### Outdoor Guidance Display

- Installed at the Entrance of Parking Garage
- Max. 8 Module
- Power supply: 100 - 240 VAC
- Supports RS-485 and Network Transmission



### DS-TPE400-E

#### On-street Parking Terminal

- Connects on-street and open-air parking cameras to manage parking spaces
- Multi-network port design
- Operating Temperature: -30 to 70 °C
- 2 TB HDD included
- Supports audible alarm and alarm uploading function after the cabinet door is opened



### DS-TCL400-E

#### On-street ANPR Post

- 4 MP, 1 / 1.8" CMOS
- Supports vehicle drive-in and -out detections
- Supports ANPR and B/W List
- Display supports 6 colors with high-brightness energy-saving LED tube
- Supports hand-to-hand connection



### DS-TCR204-E

#### Parking Space Detection Camera

- 2 MP, 1/1.8" CMOS
- 1920 x 1200 @ 25fps
- 3.1 - 9 mm motorized vari-focal lens
- Supports detection of up to 50 parking spaces
- Parking status detection, vehicle space detection, parking-on-line detection



### DS-TCR803-B

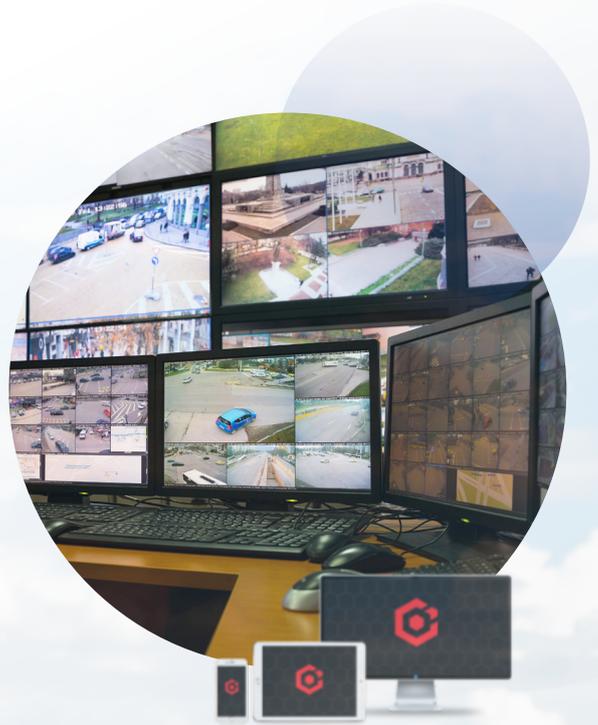
#### On-street Parking Bullet Camera

- 8 MP, 1/1.8" CMOS
- 3840 x 2160 @ 25fps
- 04 - 11 / 11 - 55 motorized vari-focal lens
- Covers up to 4 parking spaces
- Single- and double-row roadside parking & 90°-aisle parking space management
- ANPR, captures and identifies vehicles entering and exiting the parking space

## HikCentral Professional

### Management Platform

- Flexible and efficient entrance & exit management, featuring customizable access rules for vehicles and integration with ANPR cameras or self-service card & ticket dispensers.
- Improved parking experience for drivers with the parking guidance screen display the number of vacant parking spaces and the parking camera indicates the exact locations of vacant parking spaces, helping drivers quickly find vacant spaces for parking.
- Self-service parking query helps drivers quickly find their cars via the plate number, which further enhances and improves their experience.
- Flexible billing for the varying needs of parking lots, for example, charging yearly, monthly or other scheduled time periods, or setting up unique billing rules for different types of drivers.
- Intuitive and efficient parking operation analysis and transaction analysis reports, helping management staff analyze operations as well as income and expenses.



# Innovative, secure, and efficient parking with video protection

## Hikvision's Intelligent Parking Solutions

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