![Dahua TECHNOLOGY]

SMART TRANSPORTATION SOLUTION

-Secure
-Reliable
-Intelligent

P	Parking
	Entrance&Exit
	Bus
	Airport
	Seaport

CONTENTS

SMART PARKING MANAGEMENT SOLUTION

-High Efficiency
-User Friendly
-Easy Management

Convenient
• Parking Guidance
• Vehicle Locating

Safe
• Comprehensive Surveillance
• High Definition

Efficient
• ANPR Entrance
• Remote Control

Cost Saving
• Easy Installation
• Unattended 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.
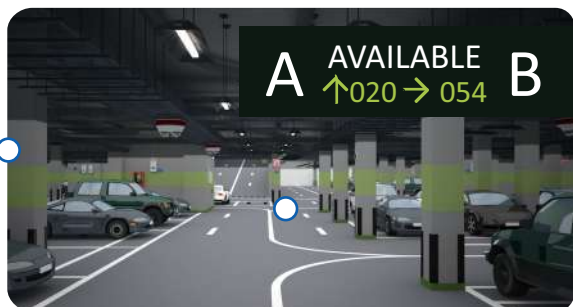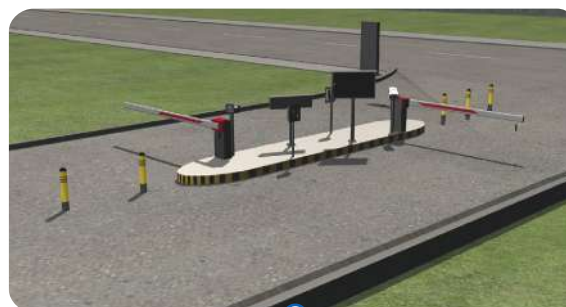• Rich parking log including data, image and video.
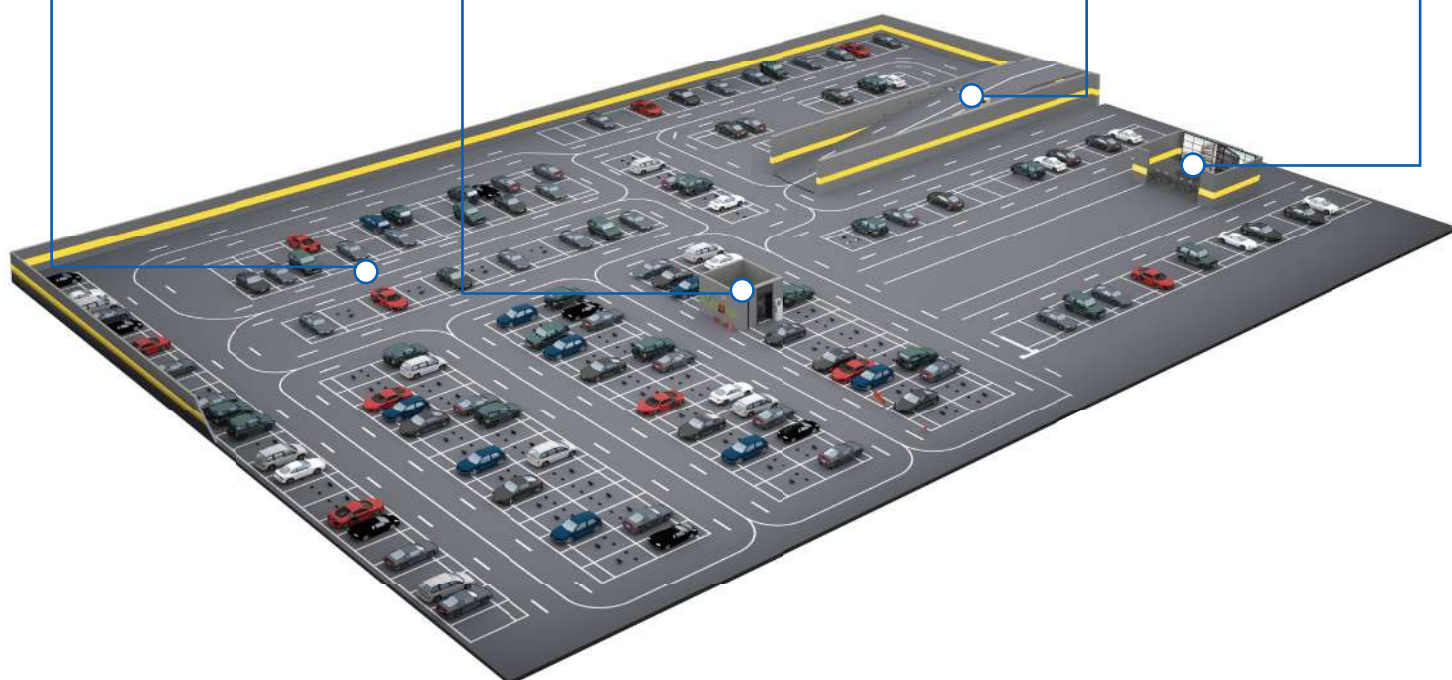
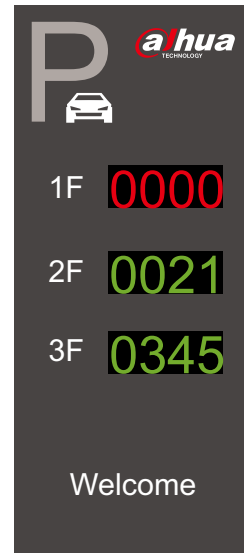# SOLUTION OVERVIEW

Parking Management

Parking Guidance

A **AVAILABLE** B
↑020 → 054

Car Locating

Entrance & Exit

APPLICATION DETAILS

Entrance & Exit

P 🚗 *alhua* TECHNOLOGY

1F	**0000**
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.
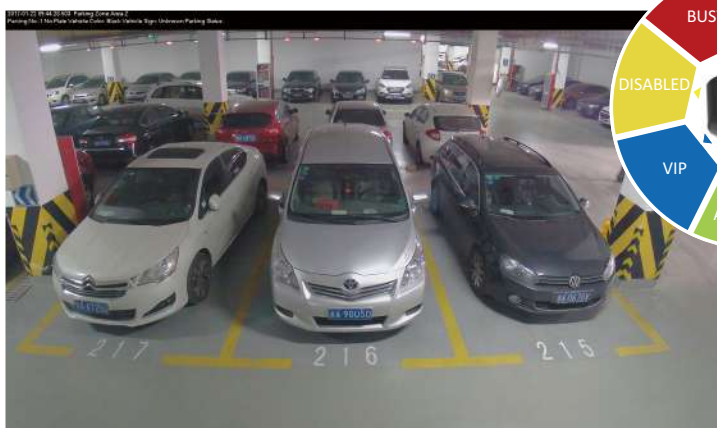
• No space to be hidden

Spot camera can automatically identify the current status of the parking space, and provide the car plate information to management center.
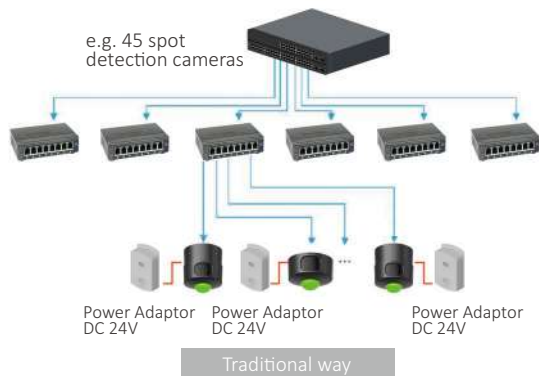
At the same time, it could provide real time video stream to the administration center for security monitoring and evidence preservation.

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%) .

e.g. 45 spot detection cameras

Power Adaptor DC 24V   Power Adaptor DC 24V   Power Adaptor DC 24V

Traditional way

VS

e.g. 45 spot detection cameras

Power Adaptor DC 53V

Power Adaptor DC 53V   cascade connection

Power Adaptor DC 53V

Innovative way
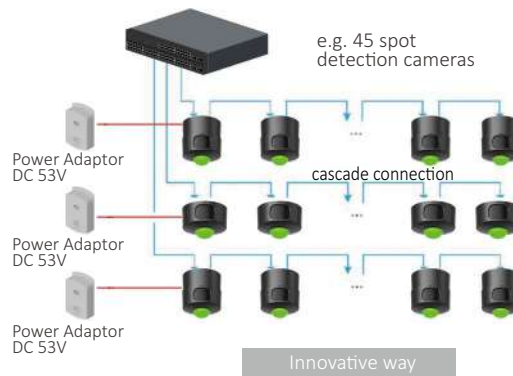
Flexible spot detecting choices

• Different parking scenes have cost-effective solutions respectively.
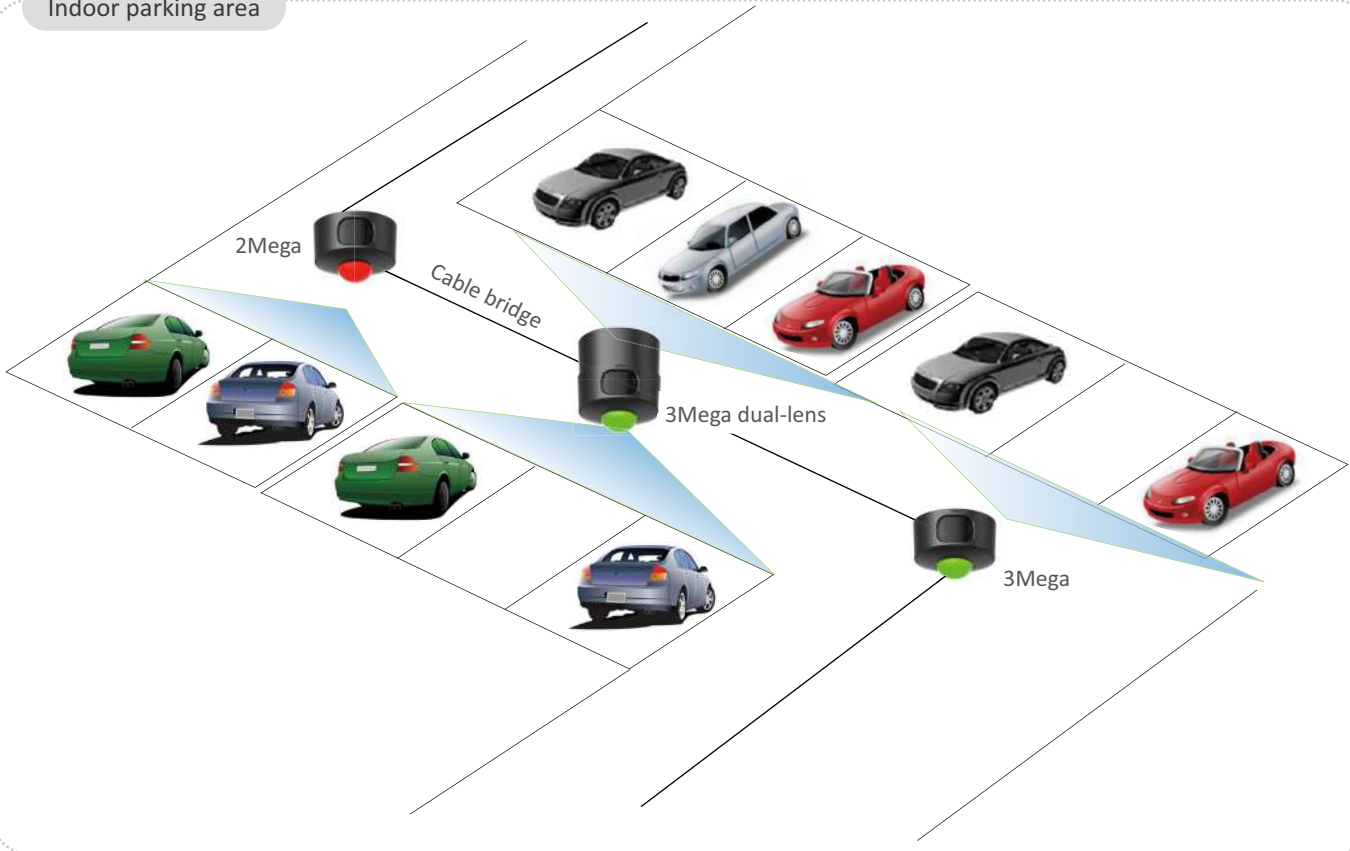
• 2Mega spot camera could detect two parking spaces. 3Mega spot camera could detect three parking spaces.

• 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
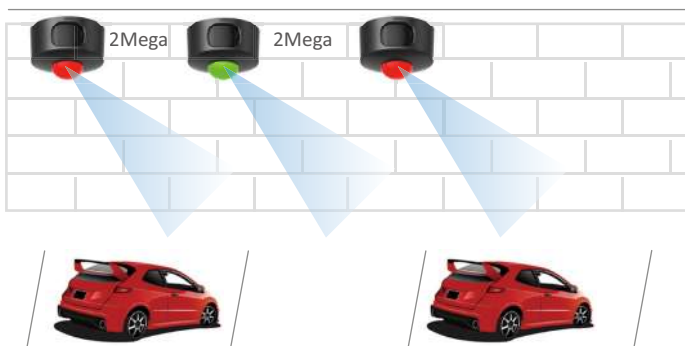
Indoor Parking area

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

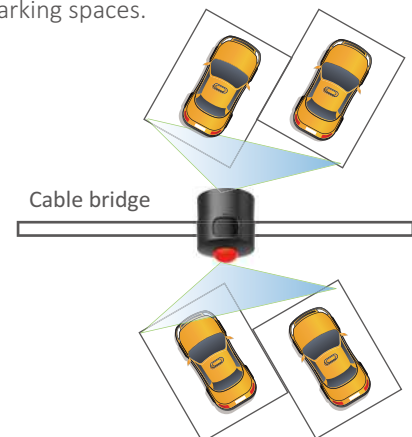Car locating kiosk with touch screen makes it easy to find your car. Fuzzy search of license plate, confirm the vehicle image and its position. Furthermore, it could show the best path from kiosk to your car.
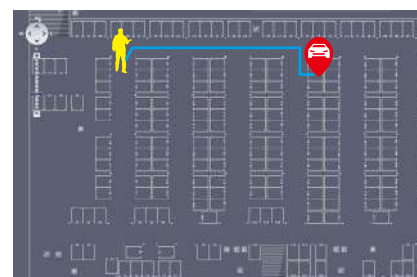
Parking Management

- **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.
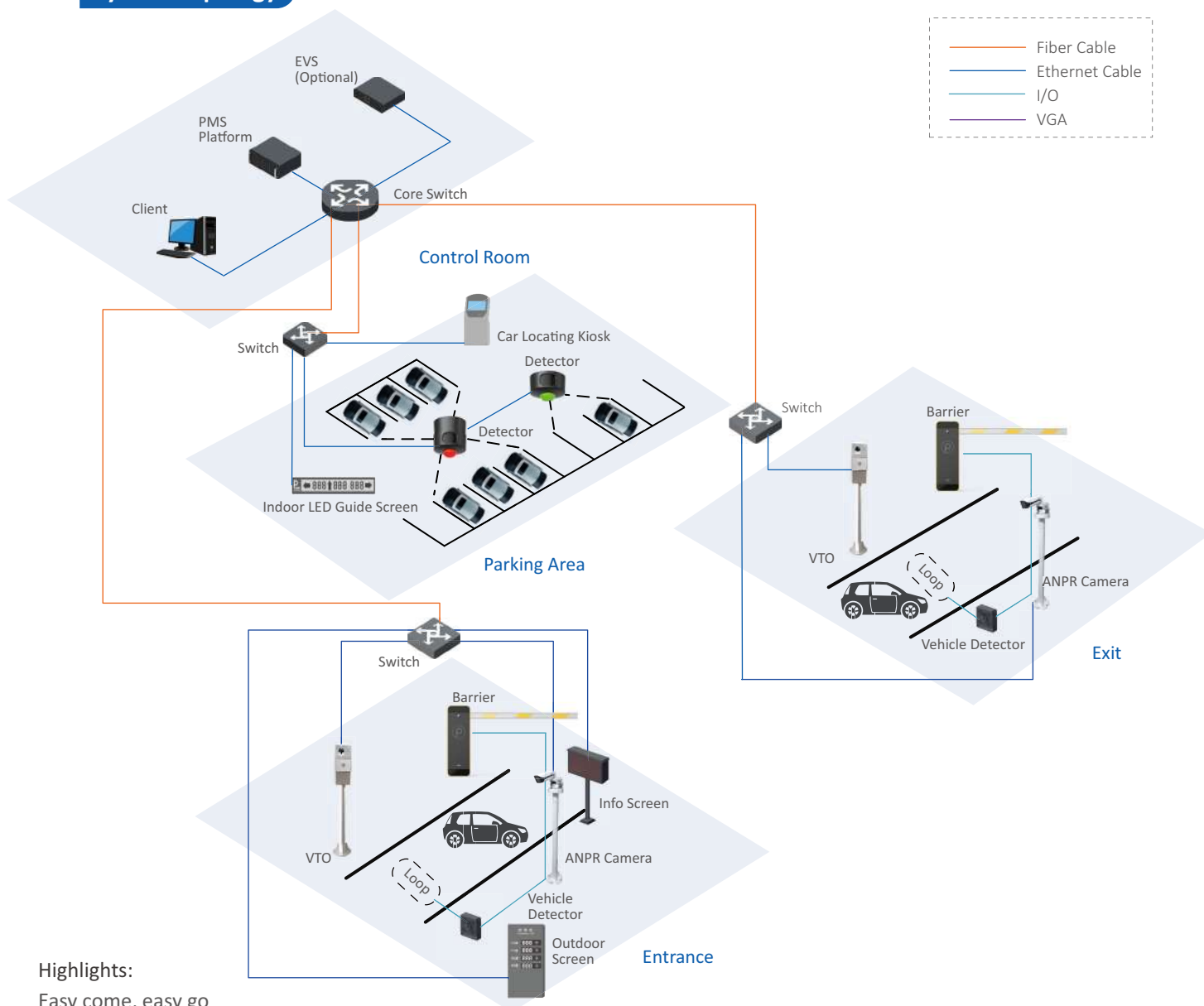
VIP Services

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

System Topology

Legend:
- Fiber Cable
- Ethernet Cable
- I/O
- VGA

Control Room: EVS (Optional), PMS Platform, Client, Core Switch

Parking Area: Switch, Car Locating Kiosk, Detector, Detector, Indoor LED Guide Screen

Exit: Switch, Barrier, VTO, Loop, ANPR Camera, Vehicle Detector

Entrance: Switch, Barrier, VTO, Loop, Info Screen, ANPR Camera, Vehicle Detector, Outdoor Screen

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

ANPR
B.Hxxx12

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
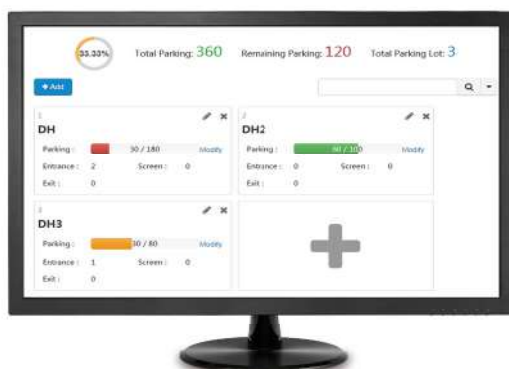
Special designed for parking management

• 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 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

ENTRANCE & EXIT CONTROL FOR VEHICLES

-Security
-Efficiency
-End-to-End

Vehicle Safety
• ANPR record
• Dual video stream
• Intercom for emergency

High Efficiency
• ANPR to open barrier
• Flexible white list
• Show available parking lots

ENTRANCE & EXIT CHALLENGES AND SOLUTIONS

Common Challenges in Entrance & Exit

Low efficiency, have to stop car and open barrier manually

Unsafe, accident happened in parking, no record for vehicle

Labor cost waste, need a guard on site once emergency occurs

How to address challenges

ANPR to open barrier
• Embedded ANPR technology
• White list to control entrance

Video door phone for visitor
• Press button to ask for help

Challenges

Available parking lots
• Vehicle counting by software
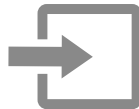
Entrance Management Software
• Search history list of car info

SYSTEM OVERVIEW

Control Room

Entrance

Exit

Legend:
- I/O
- Ethernet Cable

Labels: NVR, Internet, Core Switch, EMS sever, Switch, Barrier, Vehicle Detector, VTO, Loop, Info Screen, ANPR Camera, Outdoor Screen
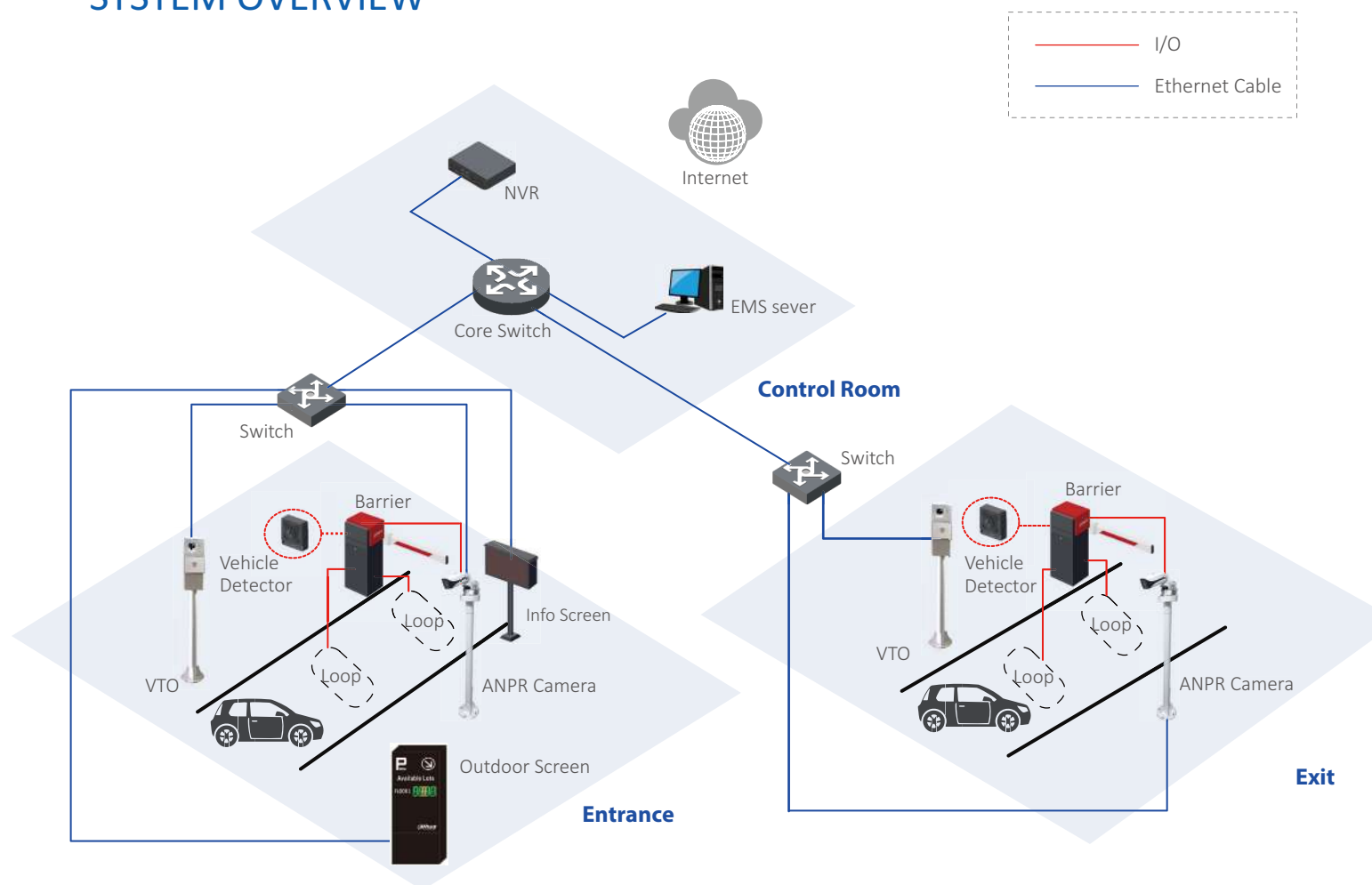
APPLICATION DETAILS

Entrance & Exit – High Efficiency

• **Outdoor Screen:** Clearly shows the available number of parking lots and help driver to know if the parking is occupied or empty.

• **Info Screen:** Clearly show the car plate info for driver, to indicate driver related information when barrier doesn't open and help driver to acknowledge the vehicle plate.

• **ANPR Camera:** Capture and recognize the vehicle plate with video & loop detection, relay out to enable the opening of the barrier and improve the entrance efficiency and safety.

• **VTO:** Inter-communication with security center when ANPR function fails to reduce the necessity of guard on-site.

• **Barrier:** Automatic open with remote authorization and close with loop detector.
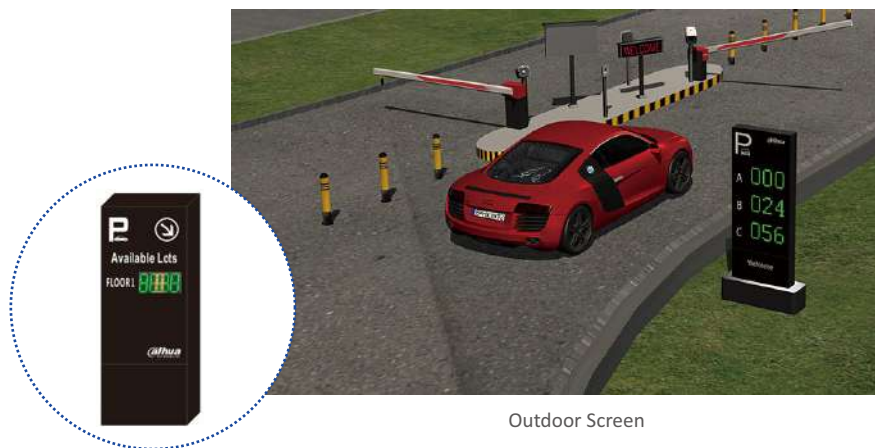
Outdoor Screen

Clear indication of available parking lots to guide the visitor and to reduce the efforts of parking lot search.
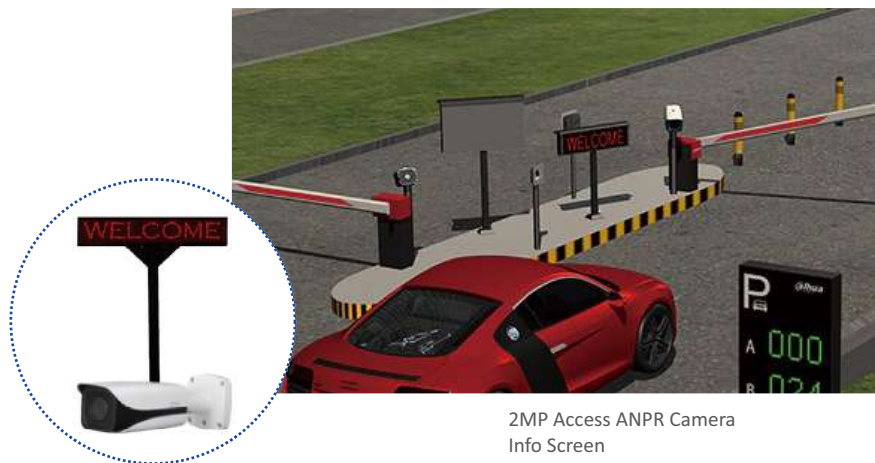
2MP Access ANPR Camera
Info Screen

For a 3-4 meter-width entrance, ANPR camera can detect the moving car in 3-8 meters distance with the assistance of video & loop. Snapshot will then help to recognize the plate number. The plate data, plate cut out, and overview image and video from camera will be stored in the platform for late search. The barrier will be automatically opened in less than 1 second via alarm out if the plate number is already registered in whitelist.

Once the number plate is recognized successfully, the info screen will indicate the plate number, helping driver to acknowledge.

ANPR with over 95% recognition rate and remote authorization via control center can greatly reduce the human intervene and increase the operation efficiency.

- Embedded ANPR, complete plate recognition in less than 1 second
- Video recognition, reduce construction cost greatly
- Present plate cutout, vehicle overview image and live video
- Video & Loop detection, improve recognition rate to more then 95%

Once the ANPR function fails, the info screen will indicate "Please press the emergency button" via text and speaker, the driver could press VTO button to call security center.

Security Center - Improving efficiency with high security

- **Record and search** the history list of car approaching and departure.

- **Simplify the registration process** of coming visitor without human intervene.

- **Emergency handling** when vehicle authorization of entrance and exit fails.

NVR

EMS
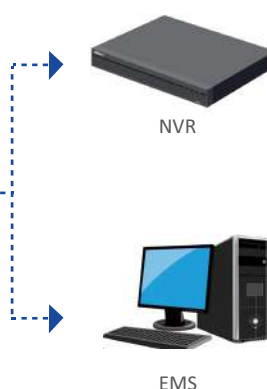
- **Comprehensive Surveillance:** Real-time preview and playback for video, modify the plate info if it's incorrect, help the guard to quickly response once an accident or an event happens.

- **Smart Search:** Search the video and image by date/time/license plate number from the server to locate the key evidence efficiently.

- **Intercom Handling:** Response to visitor or emergency call from VTO, keep the safety even without on-site watch house. Define various parameters for white list: Time, Gate channel, Plate, Quantity.

- **Multiple Linkage:** The administrator can set different linkage rules following ANPR such as open the barrier or e-mail once plate number is recognized.

- **Flexible Visitor Management:** Flexible policy for manage barrier: Automatic operation by whitelist or manual control by software remotely.
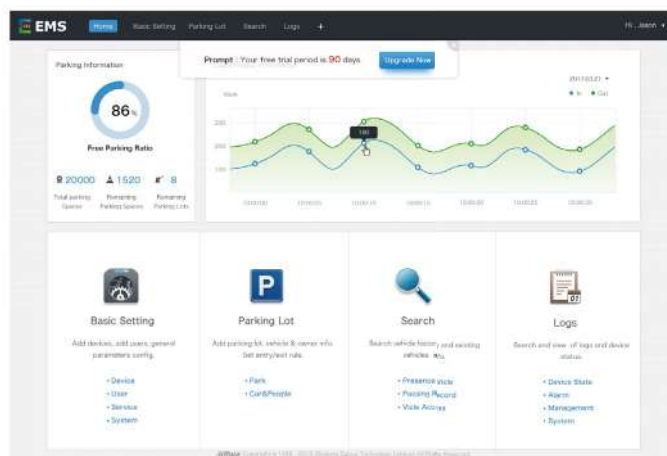
KEY TECHNOLOGY

Embedded ANPR

High ANPR accuracy, Plate capture rate by video ≥ 98%; Recognition rate ≥ 95%

With built-in intelligent video analytics, the camera is able to detect and recognize moving vehicle's plate number in low speed less than 40km/h. No matter for approaching or departing ring vehicle, the access ANPR will take a snapshot for plate cutout, vehicle overview picture and also record the surveillance video.
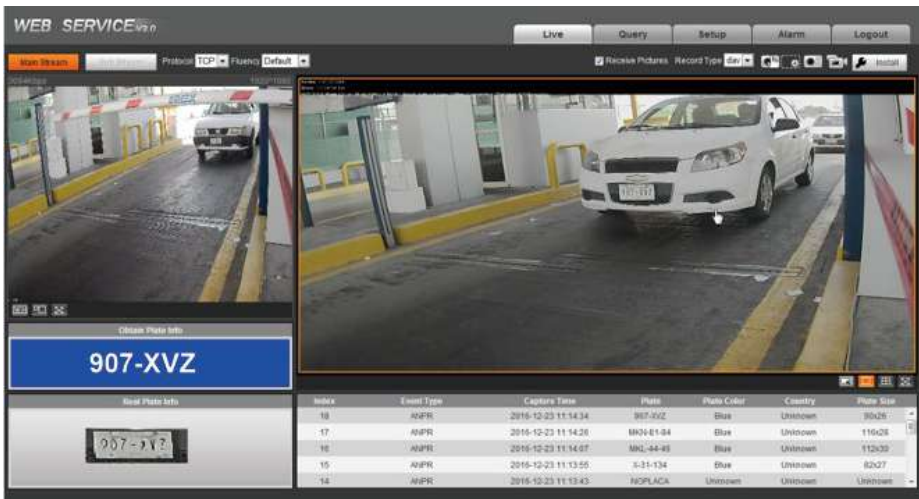
Our embedded ANPR's advantage

	Smart ANPR Camera	General Camera + LPR Server
Bandwidth	Less (Transfer image and plate)	Much more (Transfer the video)
Cost	Cost Saving (Only camera cost)	Expensive (Separate LPR server cost)
Reliability	Network independent (Work when network is offline)	Network dependent (Can't work if network is offline)

Unmanned Management of Entrance

No need for a guard onsite to manage the barrier, the ANPR system can easily judge if the approaching vehicle's plate is in the white list, open the barrier once the plate has already been registered. In case of accidents, such as visitor or ANPR failed, the intercom will be linked to the monitor center for alarming a guard to control the barrier remotely.

All the system function above can be easily configured and operated in management platform EMS, which is software based on windows available. C/S architecture design enables flexible function extension.
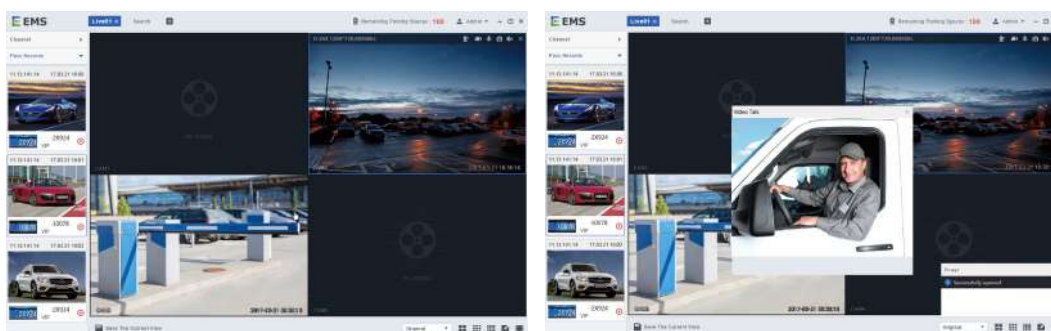
Open API for Integrator

Provide abundant data through API of different product combinations.

ITC237   CGI   Third-Party Platform

ITC+3rd party software

- Data: Plate, image (overview and plate cutout), time, white & black list event
- Command: Snapshot manually
- Support API customization for special business

ITC237   NVR   Third-Party Platform

ITC+NVR+3rd party software

- Data: Plate, image(overview and plate cutout), video, time, white & black list event
- Command: Snapshot manually
- Support API customization for special business

ITC237   NVR   EMS   Third-Party Platform

ITC+NVR+EMS+3rd party software

- Data: Plate, image (overview and plate cutout), video, time (entrance, exit and parking), available No. , white & black list event
- Support API customization for special business

SUCCESS CASES

East Coach Center of Xi'an

Stereo & Intelligent parking building, higher passenger throughput, including different system such as: Parking guidance and Reverse lookup; Card Payment & Parking fee management; Higher accuracy of license recognition

• 2200 Parking lots, 580 Spot Detection Camera
• 10 Guidance Screen, 5 Kiosks

Macalline Plaza in Guiyang

The first "Double MALL" urban commercial project in Guiyang, promote the efficiency of access or exit including different system such as: Video recognition making non-stopping for entry & exit; Visualization of parking guidance and reverse lookup

• 3000 Parking lots/1020 Detection cameras/ 5 Kiosks
• 6 ANPR cameras,80 Guidance screens
• 350 CCTV camera

Product Guide (Parking)

Parking System Products

- **Access ANPR Camera**
  - Short Focus
    - ITC237-PW1B-IRZ
  - Long Focus
    - ITC237-PU1B-L
    - ITC237-PU1B-IR

- **Digital Barrier**
  - Straight-arm barrier
    - IPMECD-2020B-R/L

- **Spot Detection Camera**
  - Dual-lens Detection Camera
    - ITC314-PH2A-TF2/3
  - Single-lens Detection Camera
    - ITC314-PH2A
    - ITC214-PH2A

- **Guidance Screen**
  - Indoor（Three -direction)
    - DHI-IPMPGI-130AC
  - Indoor（Two -direction)
    - DHI-IPMPGI-120AC
  - Indoor（One -direction)
    - DHI-IPMPGI-110AC

- **Accessories**
  - PFA162
  - Pole
  - Bracket
    - PFB604W

- **Parking Management Platform**
  - Parking Management Server
    - EMS4004
    - PMS8000
  - Parking Management Software
    - PMS PRO

Parking System Products

Parking System

- Parking entry solution promote the efficiency of vehicle access
- Parking guidance solution help to to find a free space easily
- LPR camera, recognize the vehicle plate automatically
- Includes the guidance screen/detection camera/ticket controller and etc

Access ANPR Camera

	Short Focus	Long Focus	
Model	ITC237-PW1B-IRZ ★★★	ITC237-PU1B-IR	ITC237-PU1B-L
Image Sensor	1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS
Max. Resolution	2MP (1920x1080)	2MP (1920×1080)	2MP (1920×1080)
Speed Range for LPR	0~70km/h	0~70km/h	0~70km/h
License Plate Recognition (LPR)	Support (Global)	Support (Global)	Support (Global)
LPR Monitor Distance	3~8m	4~40m	4~40m
Detection Mode	Loop & Video trigger	Loop& Video trigger	Loop& Video trigger
Electronic Shutter Speed	1/50~1/10000s	1/50~1/10000s	1/50~1/10000s
Video Compression	H.265/H.264M/H.264H/H.264B	H.265/H.264M/H.264H/H.264B	H.265/H.264M/H.264H/H.264B
Video Frame	50/60fps@1080P (WDR Off); 25/30fps@1080P (WDR On)	50/60fps@1080P (WDR Off); 25/30fps@1080P (WDR On)	50/60fps@1080P (WDR Off); 25/30fps@1080P (WDR On)
Day/Night	ICR	ICR	--
Lamp	Built-in IR light	Built-in IR light	Built-in White light
Lens	2.7~12mm, Motorized	5~50mm, Variable focal manually	5~50mm, Variable focal manually
Ingress Protection	IP67	IP66	IP66
Interface	1 ×100/1000M Ethernet, 2 I/O inputs, 1 relay output	1 ×100/1000M Ethernet, 2 I/O inputs, 2 relay output, 1 RS485	1 ×100/1000M Ethernet, 2 I/O inputs, 2 relay output, 1 RS485
Working Temperature	-40°C~+60°C (-22°F~+140°F)	-30°C~+60°C (-22°F~+140°F)	-30°C~+60°C (-22°F~+140°F)
Power	DC12V, PoE, Max. 12W	PoE+, Max. 17W	PoE+, Max. 17W

Parking System Products

Barrier

Barrier	Straight-arm barrier
Model	IPMECD-2020B-R/L
Speed	3s
Arm Length	Straight-arm, 3.5m
Control way	Manual button, hand movement when power is off
Interface	1 IO for open, 1 IO for close, 1 IO for stop,1 RS485
Automatic falling	Support, 1 ch loop
Anti Hit	Support
Consumption	150W
Working Temperature	-20°C~+85°C
Power	AC110V, 60HZ/AC220V, 50HZ

Spot Detection Camera

	3MP Duel Lens Camera	3MP Camera	1.3MP Camera
Model	ITC314-PH2A-TF2/3	ITC314-PH2A	ITC214-PH2A
Image Sensor	Duel 1/2.8" CMOS	1/2.8" CMOS	1/2.8" CMOS
Max. Resolution	3MP (2048×1536)	3MP (2048×1536)	2MP (1920×1080)
Detection Lots	6	3	2
Detection Mode	Video trigger	Video trigger	Video trigger
Licnece Plate Recoginition (LPR)	Support	Support	Support
Indicator Colors	7 colors (red/yellow/blue/green/cyan/white/pink)	7 colors (red/yellow/blue/green/cyan/white/pink)	7 colors (red/yellow/blue/green/cyan/white/pink)
Electronic Shutter Speed	1/3~1/10000	1/3~1/10000	1/3~1/10000
Video Compression	H.264 standard	H.264 standard	H.264 standard
Video Frame	20fps@3MP	20fps@3MP	20fps@2MP
Day/Night	Electronic color to B/W	Electronic color to B/W	Electronic color to B/W
Lens	2.8 mm/3.6 mm	3.6 mm/6 mm	3.6 mm/6 mm
Interface	2 ×100M self-adaptive Ethernet, 1 RS485	2 ×100M self-adaptive Ethernet, 1 RS485	2 ×100M self-adaptive Ethernet, 1 RS485
Communication	Cascading	Cascading	Cascading
Working Temperature	-30°C~+50°C (-22°F~+122°F)	-30°C~+50°C (-22°F~+122°F)	-30°C~+50°C (-22°F~+122°F)
Power	DC12 V~DC 48V Support PVE power supply, 8.5W	DC12 V~DC 48V Support PVE power supply, 6W	DC12 V~DC 48V Support PVE power supply, 6W

Parking System Products

Guidance Screen

|	Three-direction Screen	Two-direction Screen	One-direction Screen
Model	DHI-IPMPGI-130AC (Three-way)	DHI-IPMPGI-120AC (Two-way)	DHI-IPMPGI-110AC (One-way)
Display Content	Arrow (straight, left, right) + number (3 digit)	Arrow (straight, left, right) + number (3 digit)	Arrow (straight, left, right) + number (3 digit)
Content Color	Support red/green bicolor display	Support red/green bicolor display	Support red/green bicolor display
Interface	1 ×100M Ethernet, 2 RS485	1 ×100M Ethernet, 2 RS485	1 ×100M Ethernet, 2 RS485
Offline Work Mode	Support parking lot counting when offline	Support parking lot counting when offline	Support parking lot counting when offline
Max. Camera Access	128	128	128
Max. Ultra-sonic Access	30	30	30
Ingress Protection	IP50	IP50	IP50
Power	AC90~264V, Max. 35W	AC90~264V, Max. 25W	AC90~264V, Max. 15W
Working Temperature	-30°C~+60°C (-22°F~+140°F)	-30°C~+60°C (-22°F~+140°F)	-30°C~+60°C (-22°F~+140°F)
Dimensions	954.8×195.0×75.2mm	650.8×195.0×75.2mm	346.8×195.0×75.2mm

Accessories & Parking Management

Bracket

Model	PFA162	Access ANPR 1200mm Pole	PFB604W
Description	Connection bracket	1.2 m pole	Dimensions: 100x146x264mm
Application	Pole bracket of ITC237-PW1B-IRZ, ITC237-PU1B-IR, ITC237-PU1B-L, ITC217-PW1B-IRZ		Wall bracket of ITC237-PU1B-IR, ITC237-PU1B-L

Parking System Management Platform

PMS series
Parking Management System
Stable server with hardware & software all-in-one
Various function for Vehicle ocation and guidance system in the parking

	Model	PMS8000 ★★★	PMS PRO
Device Access	Supported Device	NVR, IPC, VTO, EVS, Access ANPR, Spot Detector,Car Locator,Barrier, LED Screen, IVS-T, Car Locator	
	Add Device Method	IP	
	Device	Up to 1000 Spot Detectors, 10 Access ANPR	
User	User	200 online users, Unlimited users	
Live Preview	Video Display Split	1/4/6/8/9/16/25/36/64	
	Max. Preview Screens	1	
	Max. Channels	16	
Playback	Feature	Speed 1/8x~8x, Optional video scale, Synchronization playback, search by time and etc	
	E-map	Raster map	
	Form	All in one(include hardware)	Software
Other Function	Feature	·Find the car's position and view the status of device on E-map. ·Support parking guide via controlling the guide LED and spot detector device ·Support alarm scheme CFG and event confirm ·Support vehicle locating · Manual toll collection · Auto-calculating & display the available number of parking lots; . Assign different users with different rights and parking-lots · Support set established customized content for dispaly on common screen · Support card manager and rights manager to control the vehicle, include white and black list,and etc. · Record the vehicle's entrance & exit time/plate No./daily report and etc, support fuzzy search and export; · One key to call management center via VTO, and remote barrier opening while abnormal situation occurs · Support flexible configuration of entry rules and fast departure mode for vehicles on site · Support video search and playback · Live view for various entrance & exit, customized layout. support view license plate snapshots and related information.	
Minimum System Requirements (Management & Client)	OS	64 bit Windows 7/8/10	
	CPU	Core 2 dual-core 3.0 or above	
	RAM	2GB or above	
	Display Resolution	1024 ×768 or above	

INTEGRATED SECURITY SOLUTION FOR PUBLIC BUS

-More Secure
-More Efficient
-More Profits

Crime and Accidents Prevention
• Alarm system
• Crash detection system

Management Efficiency
• Fleet tracking
• E-fence

Profit Enhancement
• Fare printer integration
• Automatic Wi-Fi upload

CUSTOMER CHALLENGES IN PUBLIC BUS

Challenges

Security Concerns

Crime and accidents (vandalism, pickpocketing, traffic incidents)
Irregular driving behavior (fatigue driving, over-speed, sharp turn, rapid acceleration, idling)

Management Efficiency

Fleet tracking
Bus scheduling

More Profits

Controlling measures of fare fraud
Reduce network traffic cost

CORRESPONDING SOLUTION

Alarm system and crash detection system

Fare printer integration

Accurate GPS tracking

Automatic Wi-Fi upload

Speed alert
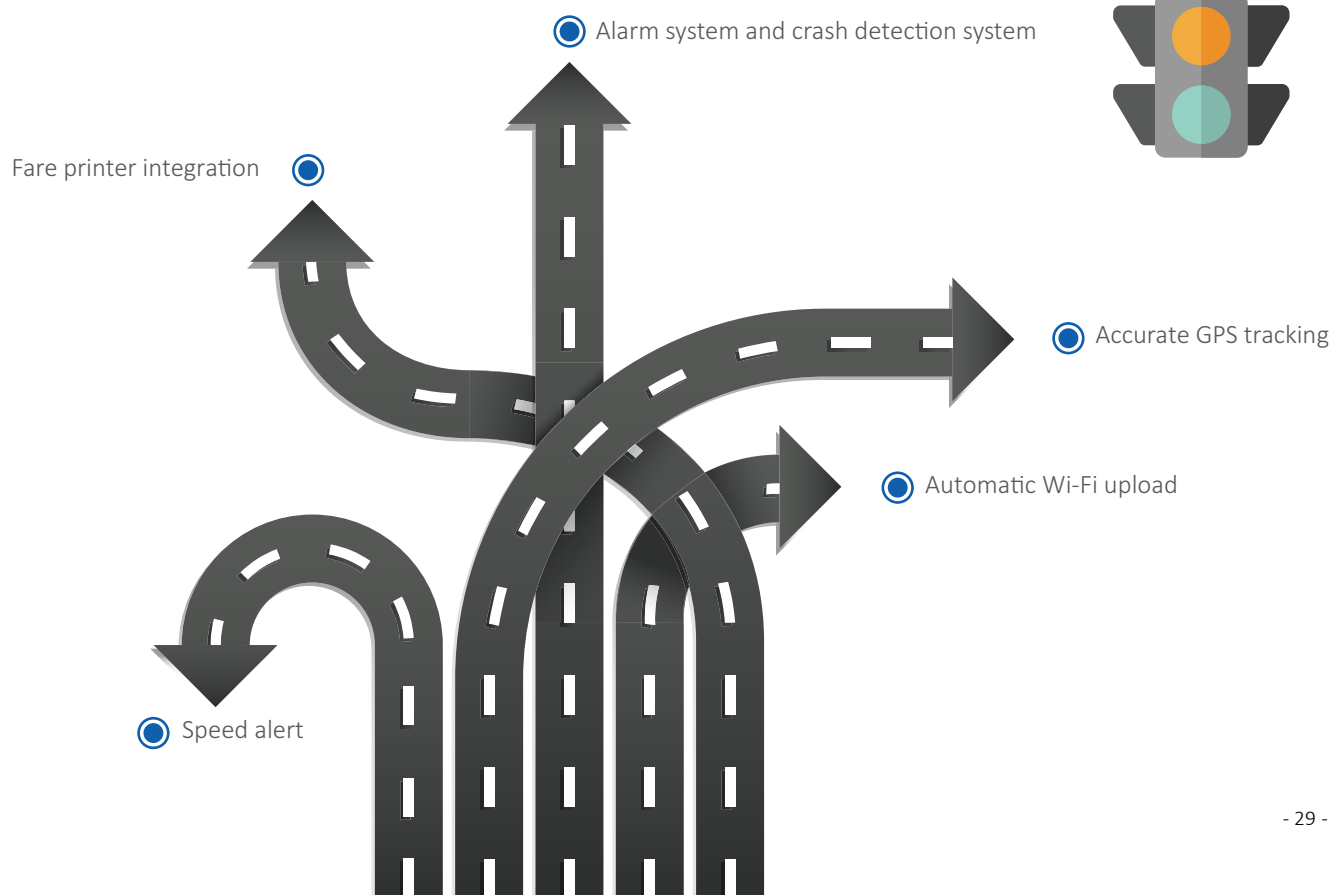
PUBLIC BUS DEVICE LAYOUT

Overview

Intercom **Fire Proof Box** **UPS** **Panic Button & LED Indicator** **Monitor** **Mobile NVR&DVR**

Camera

Camera

Fuel Sensor

Camera

3G/4G/Wi-Fi

TV Wall **Decoder** **PC Client** **IP Storage** **VMS**
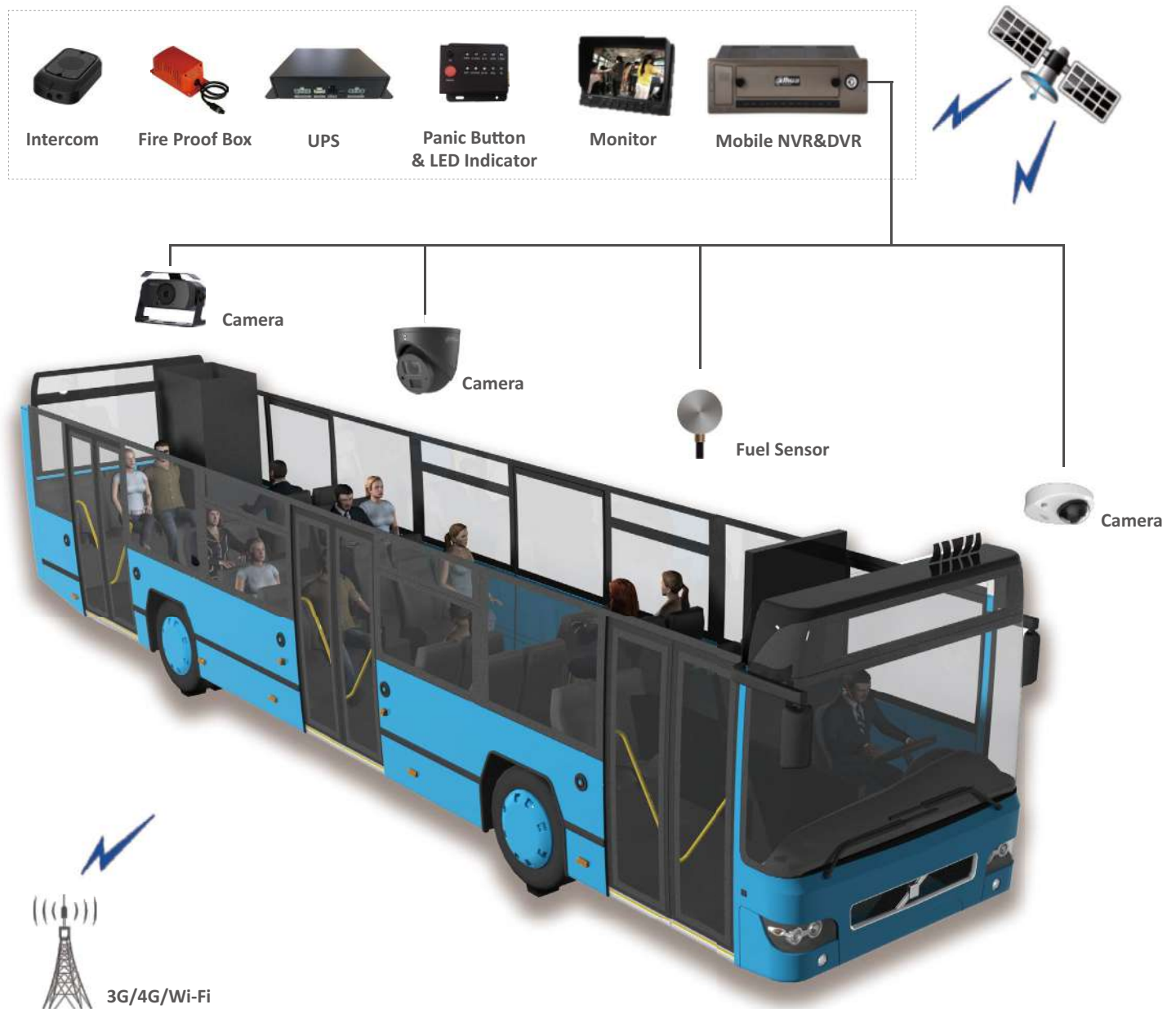
• **Onboard surveillance:** IP/ HDCVI/ Analog camera and Mobile NVR/ DVR

• **Data transmission:** 3G/ 4G and Wi-Fi network

• **Control center:** VMS/ Central Storage/ TV wall

SOLUTION DETAIL

Alarm System and Crash Detection System

Various alarm detectors connected with mobile DVR help to safeguard passengers and driver against pickpocket, vandalism, robbery and crash accident.

• Alarm Report

Control center can be notified through the 3G or 4G network immediately once the onboard incidents happened.

3G/4G
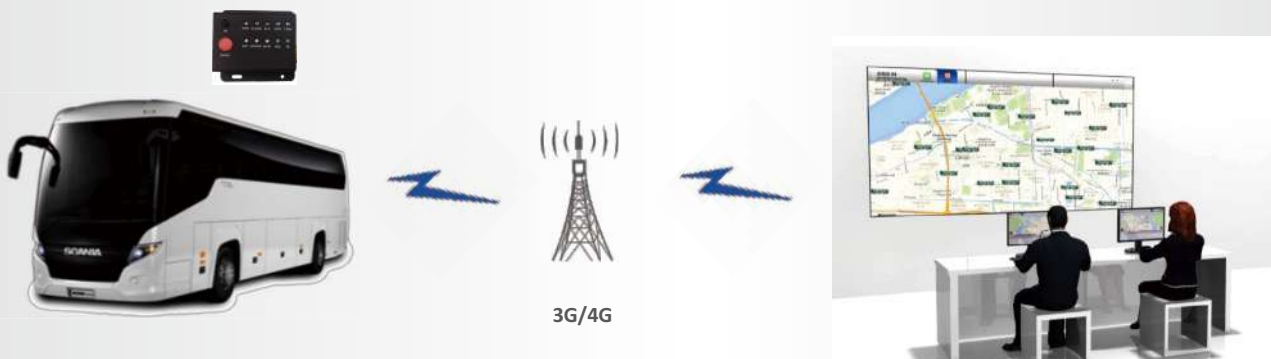
• Crash Detection System
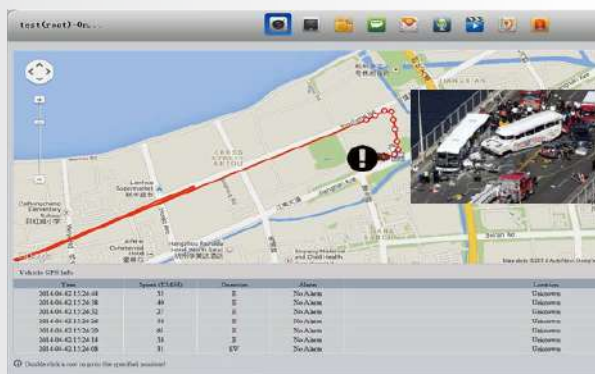
Built-in 3 axis G-sensor

Mobile DVR equipped with G-sensor inside is able to detect vehicle collision or crash accident and push an alarm to notify the control center.

Fare Fraud

Fare printer integration and fare amount statistic report everyday automatically to avoid fare fraud.

Fleet Tracking

• Various zone like speed limit zone, driving zone, forbidden zone, departure zone and arrival zone can be set on the client e-map to correct limit driving route.

• **Support:** Google online map, Google offline map, Raster map.

Speed Alert

Getting updates and alerts on bus location , direction , speed so that control center can intervene driver immediately with audio talk once abnormal situation happens.
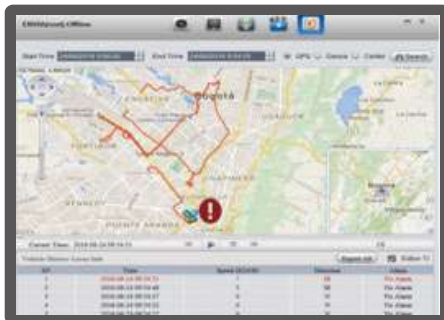
Cost Effective Network Transfer

Automatic Wi-Fi upload

When the vehicles arrive at the terminal station , the mobile NVR can switch from the 3G or 4G network to the Wi-Fi network and backup the data to the control center saving the network traffic cost.
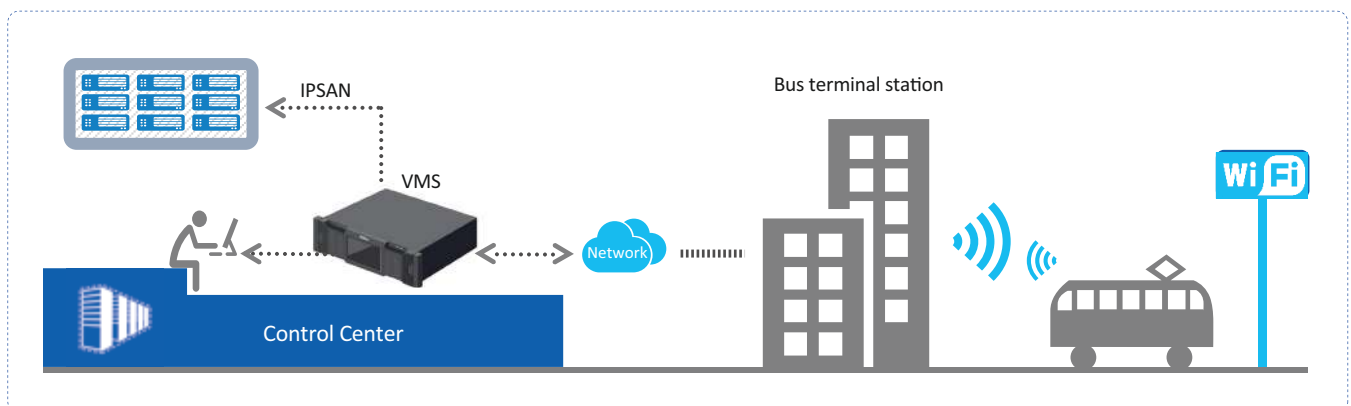
HIGHLIGHTED TECHNOLOGY

Anti-vibration

When the vehicle is running on the road, the onboard shock and vibration are the main causes of HDD damage and video footage loss. Dahua mobile devices comply with **ISO 16750-3** and **EN50155** to protect the system from electrical surge and vibration.
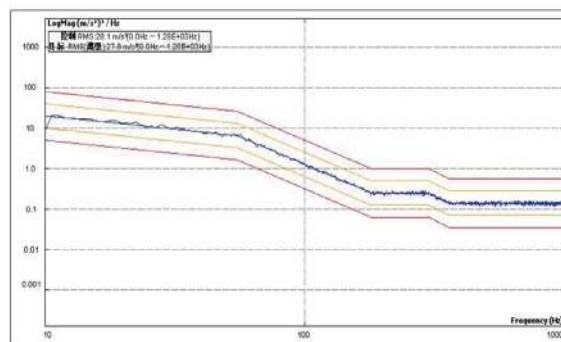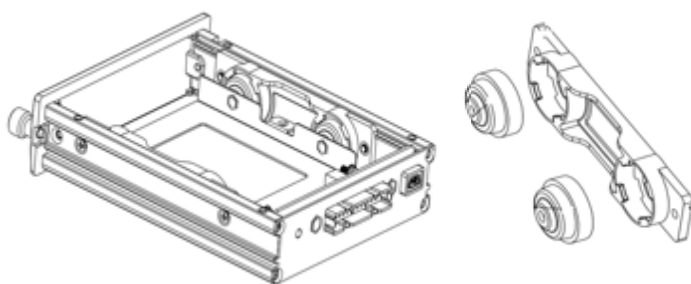
Power-off Protection

• Super-capacitor is applied to achieve smooth swith off in case of sudden system power down thus to avoid data loss and extend the hard disk lifespan.

• It keeps working about **5 sec after power off.**

• Dahua devices have already passed standards **ISO7637-2.**

• Wide voltage input **6-36V.**
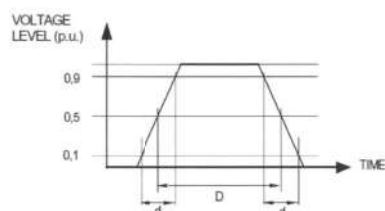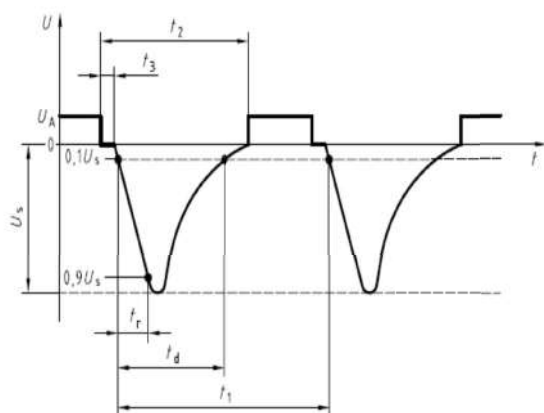
Figure 1: Test waveform

Table 1: Supply overvoltage(Un=24V)

Voltage level min.	Duration d max.	Duration D max.	Series Resistor (Tol.±10%)
1.4Un	0.1s	1.0s	1 Ω

Temperature Protection

Working temperature: **-30°C (heater optional) ~ +60°C** to cater extreme working conditions inside the vehicle.
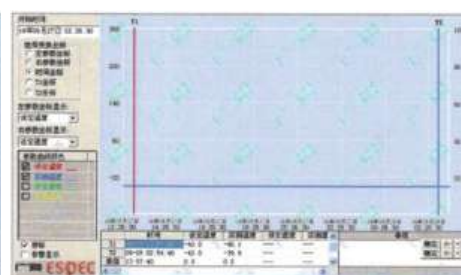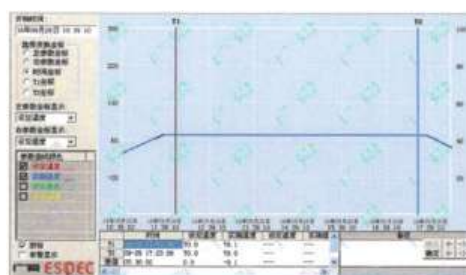
Water and Dust Resistant

Dahua offers the cameras corresponding to water and dust resistant, with **IP6K9K-rating.**

G-sensor

Built-in G-sensor inside can help users to detect the vehicle turnover and collision immediately.
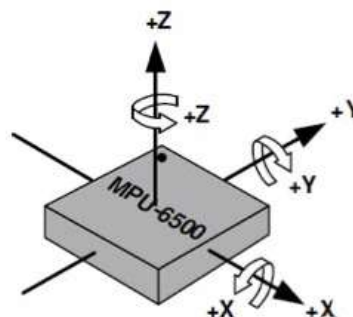
Smart Scene Adaptive

Dahua unique image processing technology makes the camera to suit different light conditions automatically .

WDR

• The WDR function is extremely useful in vehicle doors and spaces near windows to get clear enough images.
• Up to 120dB Wide Dynamic Range to capture a optimized image quality even in high contrast sunshine environment。

SUCCESS CASE

Mexico

The hybrid MCVR5104 developed by Dahua was used in Mexcio city public bus.

Dahua provides a full set of solution for video surveillance management, video storage management, vehicle location tracking, GPS positioning, emergency alarm and ticket counting, to meet the comprehensive needs of crime prevention and improve income.

Thailand

Dahua's public bus solution is deployed by the Bangkok Mass Transit Authroity(BMTA).During the first phase,the solution is deployed on 2600 of the 7000 buses operated by BMTA.

Product Guide (Mobile)

Mobile Products

Mobile NVR&CVR&DVR

Network Video Recorder
- NVR0804/0404MF
- MNVR1104

HDCVI Video Recorder
- MCVR6208
- MCVR5104

Digital Video Recorder
- DVR0404ME-SC

Mobile Camera

IPC Camera
- IPC-HDBW4X21F-M
- IPC-HDBW4X31C-M

HDCVI Camera
- MBW4X31F
- HMW3X00L-FR
- HM3X00L-F
- HMW3X00L
- HMW3X00
- HDBW2231/1200F-M
- HDW1220/1100G-M

Analog Camera
- CA-MW183H

Accessories

Fuel Sensor
- MFS

Indicator & Panic Button
- MLCD_BOX

Card Reader
- ASR1100B

Microphone
- M868

7-inch Screen
- MLCDF7-E

Mobile System Products

Mobile System Products

- Superior anti-vibration performance and excellent resistance in high and low temperature conditions
- Support Max. 16ch @ 1080P video input, all ports support PoE
- Support GPS/3G/4G/Wi-Fi, real-time position and video upload to platform
- Aviation connectors to ensure signal stability

	Mobile Camera		IPC Camera			
Model	IPC-HDBW4221F-M	IPC-HDBW4121F-M	IPC-HDBW4431C-M	IPC-HDB4231C-M	IPC-MBW4431-M12	IPC-MBW4231-M12
Image Sensor	1/2.7" 2MP CMOS	1/3" 1.3MP Exmor CMOS	1/3" 4MP CMOS	1/2.8" 2MP Exmor CMOS	1/3" 4MP CMOS	1/2.8" 2MP STARVIS™ CMOS
Focal Length	2.8mm/F2.0,3.6mm/F1.8, 6mm/F1.8 optional	2.8mm/F2.0,3.6mm/F1.8, 6mm/F1.8 optional	2.8mm/F2.0, 3.6mm/F1.6	2.8mm/F2.0,3.6mm/F1.8	2.8mm/F2.0, 3.6mm/F2.0, 6mmF2.0	2.8mm/F2.0, 3.6mm/F2.0, 6mmF2.0
FOV-H	120°/93°/63°	86°/74°/47°	110°/87°	104°/82.5°	104°/87°/55°	110°/87°/51°
Min. Illumination	0.01Lux/F2.0 (color) 0Lux/F2.0 (IR on)	0.01Lux/F2.0 (Color) 0Lux/F2.0 (IR on)	0.08Lux/F2.0(Color) 0.008Lux/F2.0 (B/W)	0.009Lux/F2.0(Color) 0.0009Lux/F2.0 (B/W)	0.08Lux/ F2.0(Color,1/3s,30IRE) 0.3Lux/F2.0 (Color,1/30s,30IRE) 0Lux/F2.0(IR on)	0.009Lux/ F2.0(Color,1/3s,30IRE) 0.07Lux/F2.0 (Color,1/30s,30IRE) 0Lux/F2.0(IR on)
Day/Night	ICR	ICR	Electronic	Electronic	ICR	ICR
WDR	120dB	120dB	120dB	120dB	120dB	120dB
Max.IR Distance	20m	20m	-	-	30m	30m
Video Compression	H.264+/H.264	H.264+/H.264	H.265/H.264	H.265/H.264	H.265+/H.265/H.264+/ H.264	H.265+/H.265/H.264+/H.264
Max.Resolution	1080P (1920x1080)	1.3M (1280x960)	4M (2688×1520)	1080P (1920x1080)	4M (2688x1520)	1080P (1920x1080)
Frame Rate	30fps@1080P	30fps@1.3M	30fps@4M	60fps@1080P	30fps@4M	60fps@1080P
Multi-streaming	3 Streams	3 Streams	3 Streams	3 Streams	3 Streams	3 Streams
Pan/Tilt/Rotation	Pan: 0°~60° Tilt: 0°~80° Rotation: 0°~360°	Pan: 0°~60° Tilt: 0°~80° Rotation: 0°~360°	-	-	Pan: 0°~170° Tilt: 0°~20° Rotation: 0°~360°	Pan: 0°~170° Tilt: 0°~20° Rotation: 0°~360°
Intelligent Video(Optional)	Tripwire, Intrusion Scene Change Abandoned/Missing Face Detection	Tripwire, Intrusion Scene Change Abandoned/Missing Face Detection	-	-	Tripwire, Intrusion, Scene Change, Abandoned/Missing, Face Detection	Tripwire, Intrusion, Scene Change, Abandoned/Missing, Face Detection
Compatibility	ONVIF(2.4), PSIA, CGI	ONVIF(2.4), PSIA, CGI	ONVIF(2.4), PSIA, CGI	ONVIF(2.4), PSIA, CGI	ONVIF profile S&G,CGI	ONVIF profile S&G,CGI
Audio In/Out	1/1	1/1	Built-in Mic	Built-in Mic	-	-
Memory Slot	Micro SD, Max. 128GB	Micro SD, Max. 128GB	Micro SD, Max. 128GB	Micro SD, Max. 128GB	Micro SD, Max. 128GB	Micro SD, Max. 128GB
Alarm In/Out	1/1	1/1	-	-	-	-
Ingress Protection	IP67, IK10	IP67, IK10	IP66 IK10	IP66 IK10	IP67,IP6K9K,IK10	IP67,IP6K9K,IK10
Working Temperature	-30°C~+60°C (-22°F~+140°F)	-30°C~+60°C (-22°F~+140°F)	-30°C~+60°C (-22°F~+140°F)	-30°C~+60°C (-22°F~+140°F)	-30°C~+60°C (-22°F~+140°F)	-30°C~+60°C (-22°F~+140°F)
Power	DC12V, PoE (802.3af), Max. 5W	DC12V, PoE (802.3af), Max. 5W	DC12V, PoE (802.3af), Max. 4.5W	DC12V, PoE (802.3af), Max. 4W	DC12V, PoE (802.3af), Max. 6.4W	DC12V, PoE (802.3af), Max. 6.4W

Mobile System Products

Mobile Camera

	HAC-HMW3200L-FR	HAC-HMW3100L-FR	HAC-HM3200L-F	HAC-HM3100L-F	HAC-HMW3200L	HAC-HMW3100L	HAC-HMW3200	HAC-HMW3100
				Analog Camera				
Model								
Image Sensor	1/2.7" 2Mp CMOS	1/2.7" 1Mp CMOS	1/2.7" 2Mp CMOS	1/2.7" 1Mp CMOS	1/2.7" 2Mp CMOS	1/2.7" 1Mp CMOS	1/2.9" 2MP CMOS	1/3" 1MP CMOS
Min. Illumination	0.02Lux/F2.0, 0Lux IR on	0.02Lux/F2.0, 0Lux IR on	0.02Lux/F2.0, 0.001lux/ F2.0(B/W)	0.02Lux/F2.0, 0.001lux/ F2.0(B/W)	0.02Lux/F2.0, 0Lux IR on	0.02Lux/F2.0, 0Lux IR on	0.02Lux/F2.0 (Color) 0Lux/F2.0 (IR On)	0.05Lux/F2.0 (Color) 0Lux/F2.0 (IR On)
Lens	2.1mm (Rear)2.8mm (Front)	2.1mm (Rear)2.8mm (Front)	2.8mm	2.8mm	2.1mm	2.1mm	3.6mm (2.8mm)	2.8mm
FOV-H	H: 139° (Rear) H: 116° (Front)	H: 139° (Rear) H: 116° (Front)	H: 116°	H: 116°	H: 139°	H: 139°	82.8° (106°)	91.6°
Day/Night	Electronic (Rear) Color(Front)	Electronic (Rear) Color(Front)	Color	Color	Electronic	Electronic	ICR	ICR
Max. IR Distance	3m (9feet), Smart IR	3m (9feet), Smart IR	NA	NA	3m (9feet), Smart IR	3m (9feet), Smart IR	20m(66ft), Smart IR	20m(66ft), Smart IR
OSD Menu	Multi-language	Multi-language	Multi-language	Multi-language	Multi-language	Multi-language	Multi-language	Multi-language
WDR	DWDR	DWDR	DWDR	DWDR	DWDR	DWDR	DWDR	DWDR
Noise Reduction	2D	2D	2D	2D	2D	2D	2D	2D
Resolution	30fps@1080P, 30/60fps@720P	30/60fps@720P	30fps@1080P, 30/60fps@720P	30/60fps@720P	30fps@1080P, 30/60fps@720P	30/60fps@720P	30fps@1080P, 30/60fps@720P	30fps@720P
Video Output	HD (Aviation Connector)	HD (Aviation Connector)	HD (Aviation Connector)	HD (Aviation Connector)	HD (Aviation Connector)	HD (Aviation Connector)	HD (Aviation connector)	HD (Aviation connector)
Audio In	Built-in Mic	Built-in Mic	Built-in Mic	Built-in Mic	Built-in Mic	Built-in Mic	Built-in Mic	Built-in Mic
Pan/Tilt/Rotation	Pan: 0° ~ 30° Tilt: 0° ~ 30° Rotation: 0° ~ 360°	Pan: 0° ~ 30° Tilt: 0° ~ 30° Rotation: 0° ~ 360°	Pan: 0° ~ 30° Tilt: 0° ~ 30° Rotation: 0° ~ 360°	Pan: 0° ~ 30° Tilt: 0° ~ 30° Rotation: 0° ~ 360°	Pan: 0° ~ 40° Tilt: 0° ~ 55° Rotation: 0° ~ 360°	Pan: 0° ~ 40° Tilt: 0° ~ 55° Rotation: 0° ~ 360°	Pan: 0°~360° Tilt: 0°~360° Rotation:--	Pan: 0°~360° Tilt: 0°~360° Rotation:--
Ingress Protection	-	-	-	-	-	-	IP67	IP67
Working Temperature	-40°C ~ +60°C (-40°F ~ +140°F)	-40°C ~ +60°C (-40°F ~ +140°F)	-40°C ~ +60°C (-40°F ~ +140°F)	-40°C ~ +60°C (-40°F ~ +140°F)	-40°C ~ +60°C (-40°F ~ +140°F)	-40°C ~ +60°C (-40°F ~ +140°F)	-40°C~+60°C (-40°F~+140°F)	-40°C~+60°C (-40°F~+140°F)
Power	DC12V±25% Max. 2.4W	DC12V±25% Max. 2.4W	DC12V±25% Max. 0.9W	DC12V±25% Max. 0.9W	DC12V±25% Max. 1.5W	DC12V±25% Max. 1.5W	DC12V±25% Max. 2.9W	DC12V±25% Max. 2.5W
Special Features	-	-	-	-	-	-	Horizontal mirror (Default)	Horizontal mirror (Default)

Mobile System Products

Mobile Camera

	HAC-HDBW2231F-M	HAC-HDBW1200F-M	HAC-HDB1200F-M	HAC-HDW1220G-M	HAC-HDW1100G-M	Analog Camera CA-MW183H-IR1	CA-MW183H
Model							
Image Sensor	1/2.8" 2Mp Exmor R CMOS	1/2.7" 2Mp CMOS	1/2.7" 2Mp CMOS	1/2.9" 2MP CMOS	1/3" 1MP CMOS	1/3" CMOS	1/3" HDIS
Min. Illumination	0.005Lux/F1.5 (Color) 0Lux/F1.5 (IR On)	0.02Lux/F2.0 (Color) 0Lux/F2.0 (IR On)	0.02Lux/F2.0 (Color) 0.002Lux/F2.0 (B/W)	0.02Lux/F2.0 (Color) 0Lux/F2.0 (IR On)	0.05Lux/F2.0 (Color) 0Lux/F2.0 (IR On)	0.05Lux/F2.0, 0Lux IR on	0.05Lux/F2.0, 0.001lux/ F2.0(B/W)
Lens	3.6mm (2.8mm, 6mm Optional)	3.6mm (2.8mm Optional)	2.1mm	3.6mm (6mm)	2.8mm	3.6mm (2.8mm, 6mm Optional)	2.1mm (2.8mm, 3.6mm, 6mm Optional)
FOV-H	87°(108.3°/53°)	89.9°(115.6°)	136°	82.8°(51.2°)	91.6°	69° (87°/45°)	107°(87°/69° /45°)
Day/Night	ICR	ICR	Electronic	ICR	ICR	ICR	ICR
Max. IR Distance	20m (66ft), Smart IR	20m (66ft), Smart IR	-	20m(66ft), Smart IR	20m(66ft), Smart IR	Up to 20m (66feet)	20m(66ft), Smart IR
OSD Menu	Multi-language	Multi-language	Multi-language	Multi-language	Multi-language	Multi-language	-
WDR	120dB	DWDR	DWDR	DWDR	DWDR	DWDR	-
Noise Reduction	2D/3D	2D	2D	2D	2D	2D	2D
Resolution	30fps@1080P, 30fps@720P	30fps@1080P, 30/60fps@720P	30fps@1080P, 30/60fps@720P	30fps@1080P, 30/60fps@720P	30fps@720P	720TVL	720TVL
Video Output	HD (Aviation Connector)	HD (Aviation Connector)	HD (Aviation Connector)	HD (Aviation connector)	HD (Aviation connector)	CVBS (Aviation Connector)	CVBS (Aviation connector)
Audio In	-	Built-in Mic	Built-in Mic	Built-in Mic	Built-in Mic	Built-in Mic	Built-in Mic
Pan/Tilt/Rotation	Pan: 0°~60° Tilt: 0°~80° Rotation: 0°~360°	Pan: 0°~60° Tilt: 0°~80° Rotation: 0°~360°	Pan: 0°~60° Tilt: 0°~80° Rotation: 0°~360°	Pan: 0°~360° Tilt: 0°~85° Rotation: 0°~360°	Pan: 0°~360° Tilt: 0°~85° Rotation: 0°~360°	Pan: 0°~60° Tilt: 0°~80° Rotation: 0°~360°	Pan: 0°~60° Tilt: 0°~80° Rotation: 0°~360°
Ingress Protection	IP67, IK10	IP67, IK10	IP67, IK10	IP67	IP67	IP67, IK10	IP67, IK10
Working Tempurature	-40°C~+60°C (-40°F ~ +140°F)	-40°C~+60°C (-40°F ~ +140°F)	-40°C~+60°C (-40°F~+140°F)	-40°C~+60°C (-40°F~+140°F)	-40°C~+60°C (-40°F~+140°F)	-40°C~+60°C (-40°F~+140°F)	-40°C~+60°C (-40°F~+140°F)
Power	DC12V±25% Max. 2.2W	DC12V±25% Max. 2.4W	DC12V±25% Max. 1W	DC12V±25% Max. 2.3W	DC12V±25% Max. 2.3W	DC12V±25% Max. 0.79W	DC12V±25% Max. 2.11W
Special Features	-	-	-	-	-	-	-

Mobile System Products

Mobile NVR & CVR & DVR

	Mobile NVR		Mobile CVR		
Model	NVR0404/0804MF	MNVR1104	MCVR6208	MCVR5104	DVR0404ME-SC
Max. Resolution	1080P	1080P	1080P	1080P	960H
Input	4/8 IP(Aviation/RJ45)	4 IP(Aviation/RJ45)	8 HDCVI/CVBS(Aviation)	4 HDCVI/CVBS(Aviation)	4 CVBS(Aviation)
Video Compression	H.264	H.264	H.264	H.264	H.264
Display	1 CVBS, 1 VGA	1 CVBS, 1 VGA	1 CVBS, 1 VGA	1 CVBS, 1 VGA	1 CVBS
Two-way Talk	1 input, 1 output	1 input, 1 output	1 input, 1 output	1 input, 1 output	1 input, 1 output
Storage	2 SATA, 1 SD(Max128G)	1 SATA, 1 SD(Max128G)	2 SATA, 1 SD(Max128G)	1 SATA, 1 SD(Max128G)	1 SD(Max128G)
Alarm Input/Output	8/3	7/2	7(Trigger support high or low)/2	7/2	7/2
USB	3(2 USB3.0, 1 USB2.0)	2 USB2.0	3(2 USB3.0, 1 USB2.0)	2 USB2.0	2 USB2.0
RS232/RS485/CAN	1/1/1	1/1/1	2/2/1	1/1/1	1/1/--
GPS/Cellular/Wi-Fi	GPS (Optional) 3G/4G (Optional) Wi-Fi(Optional)	GPS (Optional) 3G/4G (Optional) Wi-Fi(Optional)	GPS (Optional),3G/4G (Optional), Wi-Fi(Optional)	GPS (Optional) 3G/4G (Optional) Wi-Fi(Optional)	GPS (Optional) 3G/4G (Optional) Wi-Fi(Optional)
G-sensor	Built-in	Built-in	Built-in	Built-in	--
Upgrade/Maintenance	Remote upgrade and maintenance	Remote upgrade and maintenance	Remote upgrade and maintenance	Remote upgrade and maintenance	Remote upgrade and maintenance
Vehicle Function	Auto power on/off, ACC delay poweroff	Auto power on/off, ACC delay poweroff	Auto power on/off, ACC delay poweroff	Auto power on/off, ACC delay poweroff	Auto power on/off, ACC delay poweroff
UPS	Built-in UPS (5s working)	Built-in UPS (5s working)	Built-in UPS(5s working)	Built-in UPS(5s working)	Built-in UPS (5s working)
Dimensions	180×208×100mm (7.08"×8.18"×3.93")	180×220×50mm (7.08"×8.66"×1.96")	180×190×50mm (7.08"×7.48"×1.96")	180×220×50mm (7.08"×8.66"×1.96")	160×138×48mm (6.29"×5.43"×1.88")
Weight	3kg (6.60lb)	2kg (4.40lb)	2.2kg (4.60lb)	2kg (4.40lb)	1kg (2.20lb)
Working Temperature	-30°C~+60°C (-22°F~+140°F)	-30°C~+60°C (-22°F~+140°F)	-30°C~+65°C (-22°F~+149°F)	-30°C~+60°C (-22°F~+140°F)	-30°C~+60°C (-22°F~+140°F)
Power	DC6~36V, Max. 17W (no HDD), Max. 0.2W (Standby)	DC6~36V, Max. 15W (no HDD), Max. 0.2W (Standby)	DC6~36V, Max. 12W (no HDD), Max. 0.035W (Standby)	DC6~36V, Max. 15W (no HDD), Max. 0.2W (Standby)	DC6~36V, Max. 15W, Max. 0.2W (Standby)

Accessories

	7-inch Screen	Microphone	Indicator & Panic Button	Fuel Sensor	Card Reader	Camera Housing
Model	MLCDF7-E	M868	MLED_BOX	TUB	ASR1100B	PFA201W
Description	Resolution:800x480 Effective Display: 154.08x85.92(mm) Dimensions: 181.4x121.6x25.7(mm)	Sensitivity:-38dB±3dB (at1kHz,0dB-1V/pa) Frequency: 20-20KHz Impedance: 2.2KΩ 1.5V	10 LED indicator Dimension:70x50x27.5(mm)	Serial Type:RS232/RS485 Ingress Protection: IP66 Working voltage: DC9~36V	Read format: 13.56MHz Transmission Distance: 40m Ingress Protection: IP67	Material: Aluminum Dimension: 180x125.8x85mm Weight:370g
Application	Connect with MDVR Local preview and playback	Connect with MDVR Talk with platform	Connect with MDVR Display working status	Connect with MDVR Obtain fuel consumption information	Connect with MDVR Obtain card information	Protect camera Support IP6K9K

Mobile System Management Platform

DSS series (DSS-M)
Digital Surveillance System
Stable server with hardware & software all-in-one
Various function for mobile system

	Model	DSS7016-M	DSS4004-M ★★★
Device Access	Supported Device	MDVR, MCVR,NVR, IPC, EVS, Keyboard,Cardreader,Video wall Controller	
	Add Device Method	IP/Domain, SN, DDNS	
	Device	500MDVR, 2000 Channels	200MDVR, 1000 Channels
User	User	1000 online, 10000 total	
	Video Display Split	1/4/6/8/9/16/25/36/64	
Live Preview	Max. Preview Screens	4	
	Max. Views	256	
	Max. Channels	36	
Playback	Max. Task of Export	50 once	
	Feature	Snapshot, E-PTZ, Audio, Speed 1/8x~8x, Synchronization playback, POS, Fisheye dewarp, Faster/Slower play, Optional video scale	
TV Wall	Video Display Split	1/4/9/16/25/32/64	
	Feature	Liveview, Playback, PTZ control on the TV Wall	
Other Function	E-map	Raster map, Google online/offline map	
	Deployment	Stand-alone, Distributed, Cascade	
	Feature	Support google e-map for vehicles Support E-Fence function for different area (forbidde--rrivie/departure area and etc.) Support Vehicles Monitoring function (real-time locus / history locus) Support various vehicles reports	
Minimum System Requirements	OS	32/64 bit Windows XP/Vista/7/8/10	
	CPU	Core 2 dual-core 3.0 or above	
	RAM	2GB or above	
	Display Resolution	1024 ×768 or above	

MORE INTELLIGENT
MORE SECURE FOR AIRPORT

-Safe
-Intelligent
-Linkage

Prediction
- License Plate Recognition
- Face Recognition
- Intelligent Analytics

View more
- Panoramic View
- Thermal View
- 4K

Management
- Intelligent Operation and Maintenance
- E-map Application
- Alarm Management

AIRPORT THREATS AND REQUIREMENT

Common Threats in Airport

Carrying illegal items into terminal or plane

Shoot passengers in the terminal

Suicide bomber attack in the terminal

Perimeter intrusion

?

Challenges

Other threats

Hijack or suicide attack on the plane

Dangerous goods/ radioactive/ chemical / biological etc

Car bombing outside the terminal

Solution of Airport Security

Vehicle management

- Adopt all-in-One camera to capture and recognize license plate of vehicle accessing to airport
- Push alarm when detect illegal, stolen, blacklist, hit-and-run, commit crime and other suspect vehicles

Passenger management

- Combine HD video surveillance with other intelligent analysis like facial attributes extract, human attributes extract, people counting
- Monitor each area and identify each passenger timely
- Push alarm once the suspects appear or other emergency happens

Cargo management

- Video surveillance and Intrusion detection system for cargo warehouse. There are many kinds of detectors can be linkage with PTZ camera, like radar detector, Thermal detector, Active infrared detector etc.
- For cargo area, HD camera together with thermal camera ensures the luggage safety

AIRPORT LAYOUT

Runway
- Include monitoring the landing and taking off flight
- Video surveillance, thermal detection, long range viewing, panoramic mode
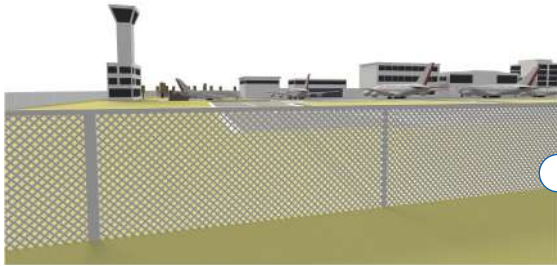
Perimeter
- Include the surveillance of perimeter and alarm system
- Video surveillance, thermal detection, alarm system, system linkage

Apron
- Include monitoring the flights and boarding scenes of passengers
- Video surveillance, PTZ camera, panoramic mode

Roads to Airport
- Include traffic control and vehicle check
- Video surveillance, license plate recognition, suspect car alarm, information issuing
- Traffic incident detection
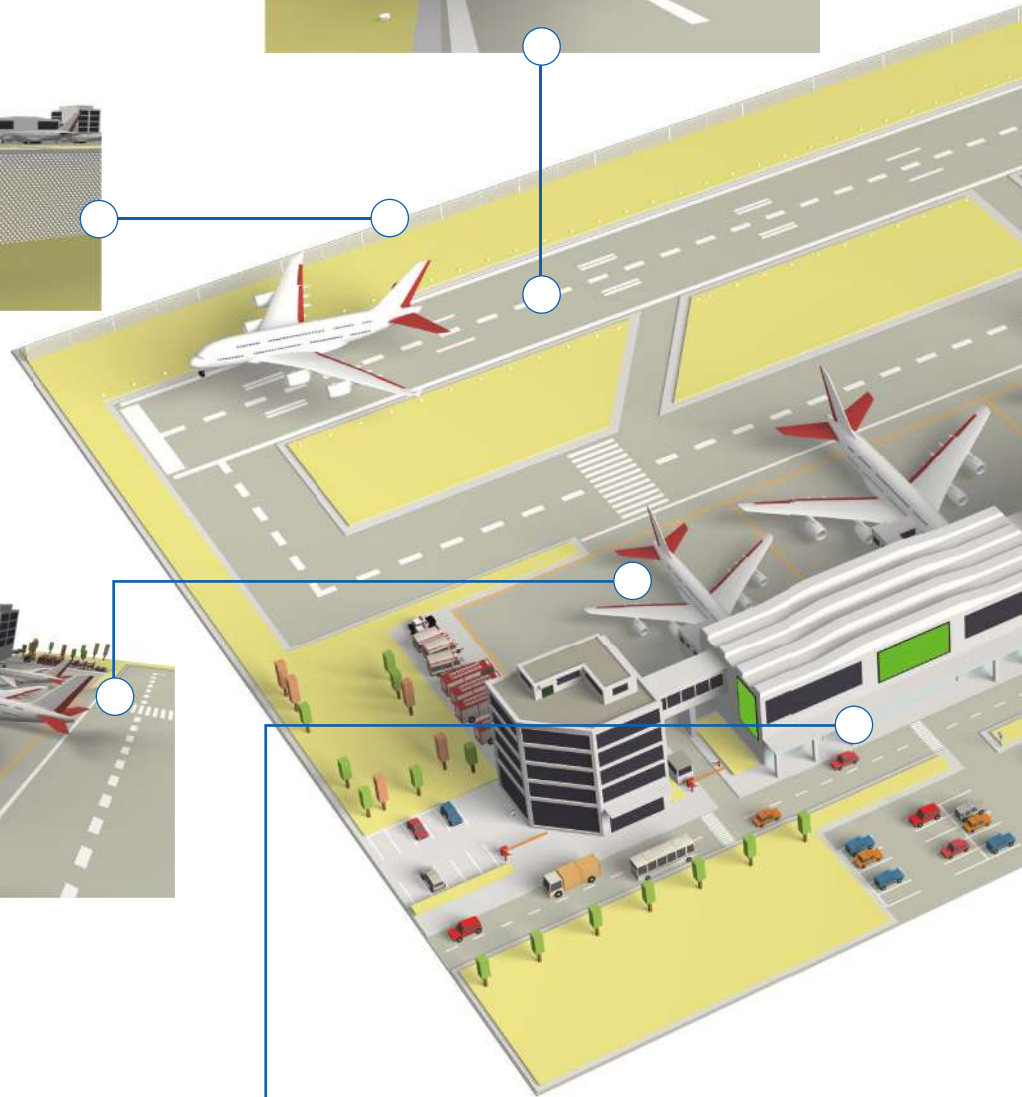
Duty-free Shop
- Include security & loss prevention and business intelligent.
- Video surveillance, POS integration, data visualization, people counting, remote patrol shop, queue management, heat map

Lounge
- Include departure and arrival area and other sensitive area
- Video surveillance, ultra high definition, intelligent analysis, wireless transmission
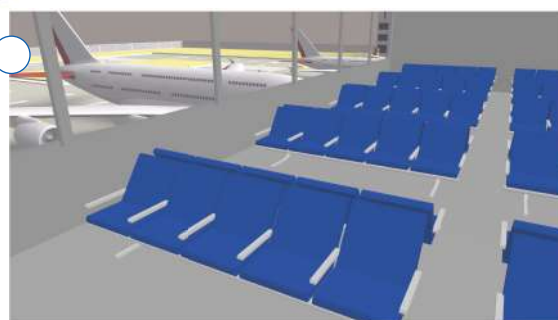
Security screening
- Include face recognition, facial attributes extract, human attributes extract.
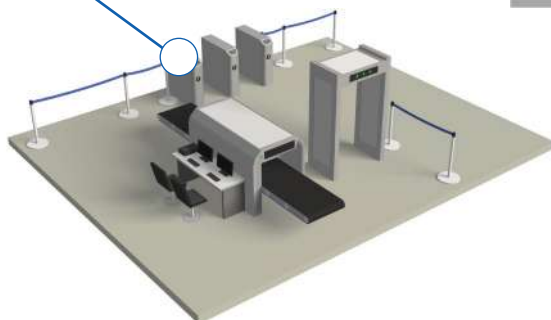
Parking Lots
- Include parking lots and entrance control
- license plate recognition, video surveillance, parking guidance, Vehicle position

APPLICATION DETAILS

Road to Airport

- Adopt image recognition algorithm to auto recognize the license plate
- Compare the plate with black list in database and find the suspect vehicle in time
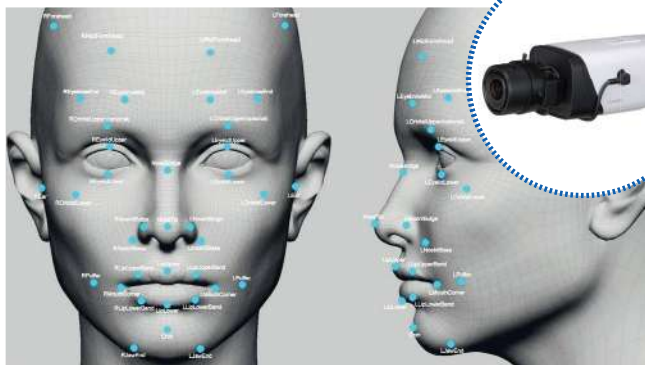- Push the alarm and help police catch the criminals

Terminal

Terminal is the most significant surveillance area due to its heaviest foot traffic among all airport areas with retail stores, Security screening, duty-free shops, airport lounges, departure and arrival area, etc.

Intelligent behavior analysis

- Combine video analysis, image processing, deep learning and artificial intelligence technology to achieve high protection of the surveillance scene
- Achieve many intelligent applications like the tripwire, intrusion, abandoned object, missing object, object protection, parking detection, loitering detection, directional flow violation detection, fast-moving, scene changing, crowd gathering estimation, crowd density and so on

Face recognition

- Recognize the face by intelligent algorithm
- Input personnel information and establish the blacklist for the system
- Trigge the alarm when recognized face match in the blacklist and help police find the criminal

he

Fisheye

- One camera catch 360° scene with no blank area
- Show real video with calibration for any area
- Multiple dewarpping modes: original, panoramic, double panoramic, 1+3, E-PTZ
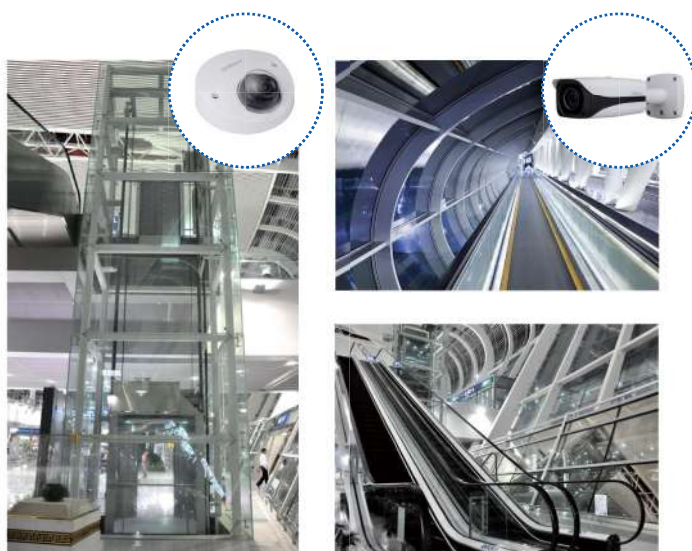
Elevator monitoring

- Video surveillance for all kinds of elevators
- Long wireless transmission distance up to 500m

Business intelligence

- Line crossing people counting, Region people counting, Queue management, Heat map.
- Reduce OPEX , increase store operating efficiency. Enhance profits by grasping the direct relationship between foot traffic data and transaction data.

Multi-lens monitor
- Multi-Lens with 180 degree panoramic view up to 32 Mega Pixels achieve real-time video
- See the airport surrounding environment more intuitive and clearer
- Effectively improve the performance of emergency command

Thermal detection
- Have one thermal camera for monitoring in total darkness and one visible camera with starlight feature and motorized lens for confirming details
- Have high thermal sensitivity to capture more image details and temperature information
- Detect illegal intrusion personnel and other objects with thermal technology

Perimeter
- Set intelligent intrusion analysis to discover and detect illegal intrusion personnel and foreign objects
- Provide visual image and confirm alarm recheck when sending alarm information to monitoring center
- Mark the intrusion object and its moving track in the video image

Cargo Area
- Set video surveillance to monitor the cargo area all the time
- Starlight camera displays the picture of place in low light clearly
- Thermal camera can detect abnormal heat source to prevent fire

Control Center

- Intelligent operation and maintenance system uses the unified management system including video surveillance, storage system, display system, access control system, alarm system, etc.
- Manage all devices including views and play back of video and all the other daily operations
- Operate and maintain system, according to the information collected by the system, to provide business processes, and to maximize of system function usage

Parking Lot

- Base on plate recognition technology to identify vehicle and control the entrance of vehicle
- Set different level of user rights to improve the security level and management effectiveness


- Detect up to six parking spaces and monitor in real time
- Display different color for different statuses of parking spaces
- Recognize license plate and upload vehicle information to platform

SYSTEM STRUCTURE AND TOPOLOGY

System Topology

Highlights:

- Unified management: management of vehicle, passenger and luggage at the same time
- High definition: 4k, panorama, fisheye, thermal, top spot
- High integration: all-in-One platform, M series for display
- Intelligent function: license plate recognition, face recognition, perimeter intrusion alarm and intelligent behavior analysis, etc.
- Easy to upgrade: ePOE technology, cost effective and easy to install
- High reliability of storage: SD card record, RAID technology and N+M hot standby
- High efficient of system: E-map, self-diagnosis and record intelligent analysis
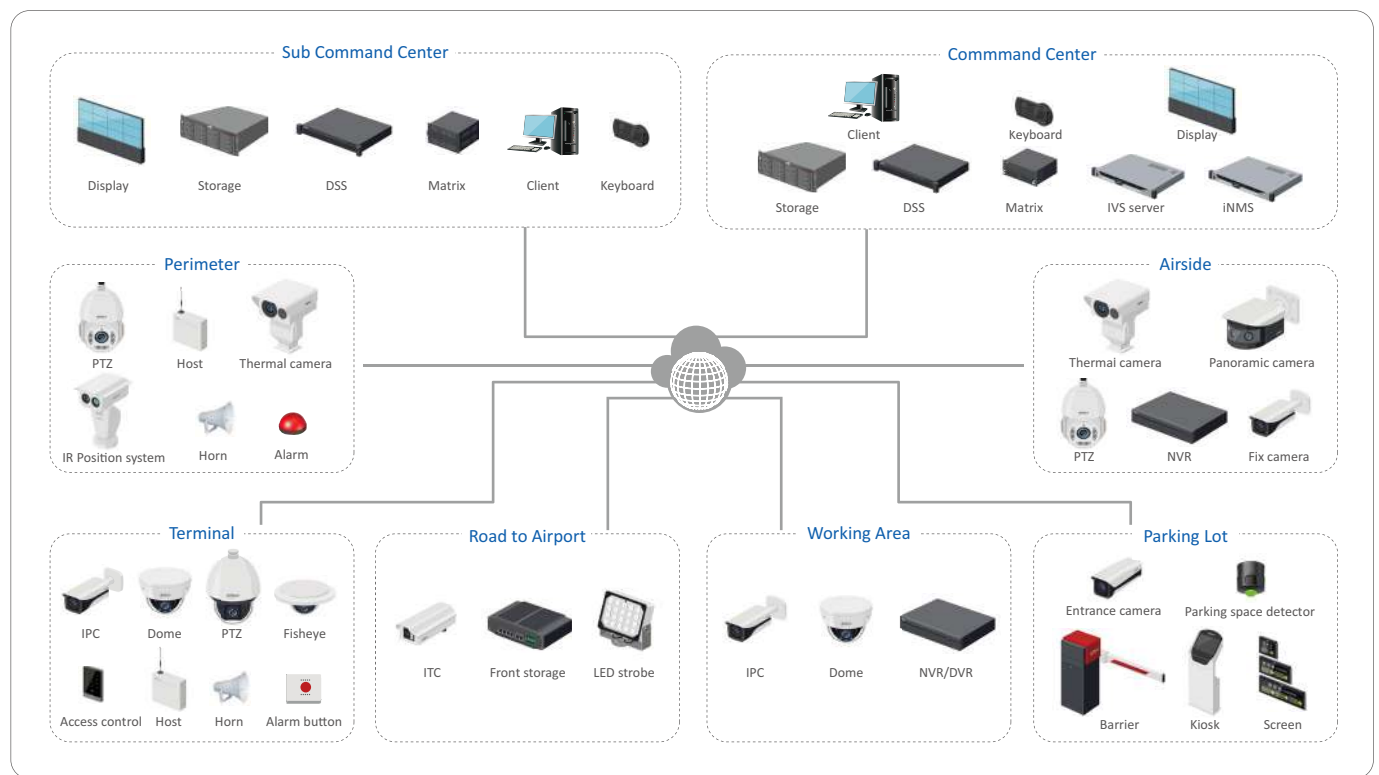
Highlighted Technology

- Panorama mode: Wider angle for apron and runway

• 4K: Resolution makes revolution, perfect application in terminal or outside to have clear details of target

4K Ultra HD Resolution (3840x2160P)   HD Resolution (1920x1080P)

• Long range viewing: Long distance coverage

• Thermal detection: Better night and contrast effect, for apron, cargo area and perimeter

• Fisheye mode: 360°and calibration, less cameras installed for store and hall

• Vehicle management: Record license plate, alarm suspect in advance and easy to find vehicle

Overtime parking detect   LPR   Parking entrance & exit   Parking spot detection

• Face recognition: Alarm in advance and easy to find target

- Platform: Powerful and stabilized system integrated with multi-system, including camera, storage, access control, alarm,etc.

ITC

IPC/PTZ

NVR

Intelligent video server

Alarm controller

Display controller& keyboard

VDP

Access controller

- Intelligent operation and maintenance: Find the failure devices timely and get them fixed in time

Video quality diagnosis


System Statistics
information diagnosis

Server status diagnosis

- Business Intelligence: Decrease OPEX, increase store operating efficiency, enhance profits.

Entrance:15
Exit:8

- People Counting
  Advanced cameras provide People Counting functionality which counts foot traffic at store entrances and can export daily/monthly/yearly reports. Traffic analysis can greatly improve business efficiency
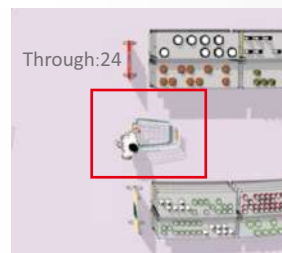
Through:24

- Regional People Counting
  Understanding how customers move through a store is the key in helping businesses optimize product placement and prolong customer stay. People Counting can be set to monitor traffic flow in certain regions.

- Heat Map
  A fisheye camera provides heat map functionality displaying hot and cold areas based on customer low, allowing for enhanced business analysis. Fisheye cameras also provide a 360 degree image of the store floor

- POS Integration
  Video and corresponding POS information can be shown simultaneously in both live and playback mode. The system also supports text search to find bills and their associated video recordings.

PARTNERS

As a global open company, Dahua hopes to work with partners to provide customers with perfect solutions. We give our greatest efforts to achieve customers, partners, and thus achieve Dahua.

Build Smart Solutions with Dahua
Dahua provide different integration possibilities

1. Different integration protocols
- Private protocols---CGI, SDK, Restful protocols
- ONVIF---ONVIF Full Member, support ONVIF Profile S&G&Q&T&A&C
- SIA—Alarm products integration

2. Different development environment support
- Windows, Linux, IOS, Android, ARM

3. Different programmer language
- C, C+C, C++, JAVA, etc.

4. Compete test environment
- Online test, discount sample, DH certification

Dahua Technology Partners

DAHUA OPEN PLATFORM (DHOP)

What is DHOP about?

Dahua Open Platform extends functionality to meet specific end-user needs. DHOP enables downloading third-party applications to Dahua network cameras.
• Value added beyond the Dahua product's core functionality.
• Tailor-made solutions developed and installed by system integrators, resellers and end users.
• Metadata generated at the edge.
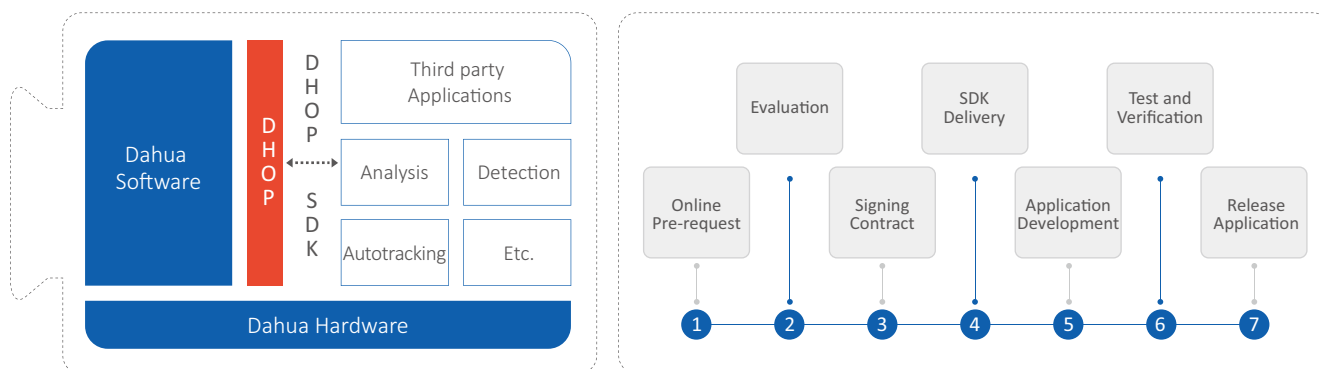
Core value

• Allows 3rd party partners to develop their own applications, eliminating restrictions from Dahua.
• Integrators, resellers, and end users may select the most suitable add-on applications developed by 3rd party partners from official channels.
• Comprehensive testing and verification will be performed by Dahua to ensure their interoperability and reliability before official release.
• Third party partners can develop their own webpage/web client to manage their applications.
• End user can purchase license directly from DHOP partners. Dahua will assistant its official DHOP partners to release the license in cameras Free of Charge.

DHOP Partners

Dahua have already 6 partner that finish the integration for DHOP
• Intellivision: Intrusion, lotering, ObjectLeft, Line crossing and so on
• A.I.Tech: People Counting, lotering and so on
• Axxon: Auto-Tracking
• Technoware: People Counting, Hot zones, LeftObject and so on
• FF Group: LPR Alogorithm
• Facit: People counting

PRODUCT SHOWCASE

ITC352-RU2D-IRL

- All-in-One camera
- 1/1.8" 3M Global Shutter COMS
- Embedded design, built-in a variety of algorithms
- Supports ANPR, metadata collection and analysis, traffic data statistics, etc.
- Temperature -40°C~+80°C, humidity 10%~90%, suitable for the rough work scene

IPC-EBW81240

- 1/1.7" 12M STARVIS™ CMOS
- Multiple dewarpping mode: original, panoramic
- Micro SD memery, IP67, IK10, PoE
- Built-in deep learning algorithms
- Support People counting, queue detection and alarm, dwell time management and heat map etc.

IPC-HDBW8242E-Z4FD

- 1/1.9"2Mp STARVIS™ CMOS
- WDR(120dB), Day/Night(ICR), 3DNR, AWB, AGC,BLC
- Micro SD memory, PoE+
- Build-in 4x optical motorized zoom len
- Max. IR LEDs Length 100m
- Built-in deep learning algorithms
- Support face capture, face attributes

SD8A240VA-HNA

- 1/1.9" 2Mp CMOS
- Powerful 40x optical zoom
- Micro SD memery, IP67, IK10, Hi-PoE
- IR distance up to 450m
- Built-in deep learning algorithms
- Support Face capture, Metadata, Face recognition, Blacklist alarm, Vehicle capture and Vehicle recognition etc.

IPC-HF8242F-FD

- 1/1.9" 2Mp STARVIS™ CMOS
- WDR(120dB), Day/Night(ICR), 3DNR, AWB, AGC, BLC
- Auto back focus(ABF)
- Micro SD memory, PoE
- Built-in deep learning algorithms
- Support face capture, face attributes

DH-TPC-ACPT8620C-B

- 640*521 VOx uncooled thermal sensor technology
- 1/1.9" 2Mp STARVIS™ CMOS
- Powerful optical zoom lens(Thermal&Visible)
- Laser range finder or laser illuminator optional
- Support fire detection & alarm
- Max 12°/s pan speed, 360° endless pan rotation
- Anti-corrosion/NEMA 4X, IP66

IPC-HFW8242E-Z20FD-IRA-LED

- 1/1.9" 2Mp STARVIS™ CMOS
- WDR(120dB), Day/Night(ICR), 3DNR,AWB, AGC,BLC
- Micro SD memory, PoE+
- Build-in 20x optical motorized zoom len
- Max. LED Length 30m
- Built-in deep learning algorithms
- Support face capture, face attributes

IPC-PF83230-A180

- Four 1/2.0" 8Mp STARVIS™ CMOS
- H.265/H.264 triple-stream encoding
- Max 25fps@8640x3840
- Support 180-degree panoramic view
- Day/Night(ICR), 3DNR, AWB, AGC, BLC

IVSS7016DR-4T

- Intel quad-core processor
- 512Mbps incoming bandwidth, 256 Channel IP video access
- Embedded with deep learning algorithm
- 16 Channel video stream face recognition
- 40 Channel picture stream face recognition
- Search by image, Face database management
- Supports RAID 0/1/5/6/10, Redundant power

PRODUCT SHOWCASE

IPC-HDW8341X-3D

- Two 1/2.8" 3Mp STARVIS™ CMOS
- DWDR, Day/Night(ICR), 3DNR, AWB, AGC, BLC
- Max. IR LEDs Length 10m
- Micro SD memory, IP67, PoE
- Built-in deep learning algorithms
- People Counting: Support line crossing people counting, region people counting

IVS-F7500-2P

- 2 Intel Xeon processors, 20 cores per processor
- 2 NVIDIA TESLA P4 GPU. Using GPU for deep learning and computing
- 2 x M.2 SSD 240 GB, raid1. 512GB DDR4 ECC memory, 12 × 4T SATA HDD
- Up to 200 channels face recognition
- Dynamic Database 300,000, Static Database 100 million
- Search by image, Blacklist alarm

DHI-M70-4U-E

- Easy and flexible configuration with pluggable card module design
- 80ch@1080P or 320ch@D1 signal encoding
- 80ch@4K or 320ch@1080P or 720ch@720P or 1500ch@D1 signal decoding
- Support max 60 screens splicing
- 6 RJ-45 gigabit network ports for matrix control, preview and online central storage

NVR5832-I

- 32 Channel IP video access
- Built-in deep learning algorithms
- 16 Channel perimeter protection
- 4 Channel video stream face recognition
- 24 face pictures/sec processing
- 20 face databases with 100,000 face images in total
- Support ANPR and POS integration

DHL550UCM-ES

- 55'' Full-HD video wall display
- Industrial level DID LCD panel, suitable for extensive 7×24 continuous works
- Ultra-narrow 3.5mm side LCD patchwork
- High contrast and high brightness
- Built-in picture splicing function
- Abundant interfaces HDMI, DVI, VGA, BNC, support video loop

ITC215-PW4I-IRL

- 1/2.8" 2Mp STARVIS™ CMOS
- Embedded with deep learning LPR algorithm
- Support plate cutout, overview picture snapshot
- Embedded with White list database, control the barrier
- Wide working temperature, IP66, True WDR technology
- Suitable for parking, access control and urban street

EVS7024D-R

- Dual Controller architecture
- 768 IP Cameras Inputs, 1536Mbps Incoming Bandwidth
- 24 HDDs, SAS, Hot-Swap
- Supports RAID 0/1/3/4/5/6/10/50/60/JBOD, Hotspare
- Supports iSCSI and Mini SAS Expanded
- Support standard iSCSI Protocol Storage
- Modular&Cableless Design, Redundant Power

ITC314-PH2A-TF3

- 3MP 1/2.8" inch CMOS, 0.01lux min illumination
- Dual-Lens design, simultaneously detect up to 6 spaces
- Parking space Indicator supports at least 7 colors
- Supports WDR.
- Supports PvE (Power via Ethernet)
- Supports up to 4 angled parking spaces detection

DSS Pro

- High Reliability. Supports hot standby for master server.
- High Compatibility. Connects third-party devices via standard ONVIF protocol.
- Dahua's devices included: network camera, network speed dome, decoder, NVR, DVR, ANPR, IVS-F, IVS-T, etc.
- DSS Pro SDK for third-party platform or mobile development

PRODUCT OVERVIEW

Product	Description	Road to airport	Terminal	Airside	Cargo area	Perimeter	Control center	Parking lot
ITC352-RU2D-IRL	3MP AI Traffic Picture Capture Camera	●						
IPC-EBW81240	12MP AI Panoramic Network IR Fisheye Camera		●		●			
SD8A240VA-HNA	2MP 40x Starlight IR PTZ AI Network Camera	●	●	●	●	●		
IPC-HF8242F-FD	2MP Starlight Face Recognition Box AI Network Camera		●	●	●		●	
HFW8242E-Z20FD-IRA-LED	2MP Starlight Bullet AI Network Camera		●	●	●		●	
IPC-PF83230-A180	4x8MP Multi-Sensor Panoramic Bullet Network Camera		●	●				
IPC-HDBW8242E-Z4FD	2MP IR Starlight Dome AI Network Camera		●	●	●		●	
IPC-HDW8341X-3D	3MP Dual-Lens People Counting AI Network Camera		●					
DH-TPC-ACPT8620C-B	Thermal Network Anti-corrosion Tribrid PTZ Camera			●		●		

PRODUCT OVERVIEW

Product	Description	Road to airport	Terminal	Airside	Cargo area	Perimeter	Control center	Parking lot
NVR5832-I	32 Channel 2U AI Network Video Recorder		●	●	●	●	●	
IVSS7016DR-4T	3U 16HDD AI Network Video Recorder		●	●	●	●	●	
EVS7024D-R	24-HDD Enterprise Video Storage with Dual Controller						●	
IVS-F7500-2P	Face Recognition Server		●	●	●		●	
DHI-M70-4U-E	Multi-service Video Management platform						●	
DHL550UCM-ES	55'' Full-HD Video Wall Display Unit (Ultra Narrow Bezel 3.5mm)						●	
ITC215-PW4I-IRL	2M Full HD AI Access ANPR Camera	●				●		●
ITC314-PH2A-TF3	3MP Dual-Lens Parking Space Detector							●
DSS Pro	General Surveillance Management Center						●	

SUCCESS CASES

Dahua Secures Peruvian LAN Airline Premises

Dahua provided a hybrid solution — a combination of AP (access points) and wire transmission for Peruvian LAN Airline. The system supported wirelessly transmit the camera data to inter-connected sub-centers, and then cable-transmit to the control room.

• Total hundreds of network cameras and speed domes
• Over 15 16-channel PoE NVRs were applied for storage, accommodating up to 16TB with 4 SATAs supported, ensuring a large volume 7/24 storage

Santiago Pudahuel Airport in Chile

Dahua provided video surveillance solution for Santiago Pudahuel Airport. The whole system included front-end camera and storage and control center.

• More than 100pcs IP cameras and 50pcs IP PTZ cameras
• 2pcs NVR6000
• Control center

Nadi International Airport in Fiji

Dahua completed video surveillance for more than 60 duty-free shops in Nadi International Airport, the rest of the complex and shops were under updating gradually.

• Fish-eye camera combined with heat map function to have 360 degree monitoring and business analysis for duty free shops
• Back end ultra and pro NVR at monitoring center for back up storage
• Use SmartPSS and P2P technology to make full management

Liverpool Airport Surveillance Project

Dahua provided TV wall for Liverpool Airport to display daily work, including front-end cameras, PC desktop signal and wall-mounting.

• 6 46" video wall
• 1 video matrix

MORE INTELLIGENT
MORE SECURE FOR SEAPORT

-Secure
-Reliable
-Intelligent

More Details
• Panoramic View
• Thermal View
• 4K

Better Reliability
• Anti-Corrosion
• Explosion-Proof
• Dustproof

Video Analysis
• Container No. Recognition
• License Plate Recognition
• Face Recognition

SEAPORT THREATS AND REQUIREMENTS

Environmental Challenges of Seaport Surveillance

24/7 Operations
Systems need to be operational all day, every day.

Poor Operating Conditions
Close proximity to sea-water can cause devices to become dusty and rust easily.

Hazardous Goods
Protect radioactive, chemical, biologic, and explosive materials stored in the yard.

Challenges

Trespassing Prevention
It is essential that unauthorized personnel may not enter seaport areas.

Rough Weather
Bad weather conditions can cause heavy damage to seaport devices and systems.

Common Seaport Surveillance Management Requirements

Container Management

Container No. Recognition
- OCR technology recognizes container numbers, avoiding human error and interference
- It facilitates and enhances seaport management efficiency at the gate, yard, quay as well as operations of quay crane and spreader in the loading and unloading zones.

Vehicle Management

License Plate Recognition
- All-in-one camera captures and recognizes the license plate of vehicles accessing seaport (country-specific)
- Drivers can communicate with command center through video intercom in emergencies or to verify identity

Personnel Management

Face Recognition & Access Control
- Face Recognition at the gate records a subject's facial characteristics, entrance time, and place of entrance
- The system will generate an alarm if recognized face is on the blacklist

SEAPORT LAYOUT

Perimeter
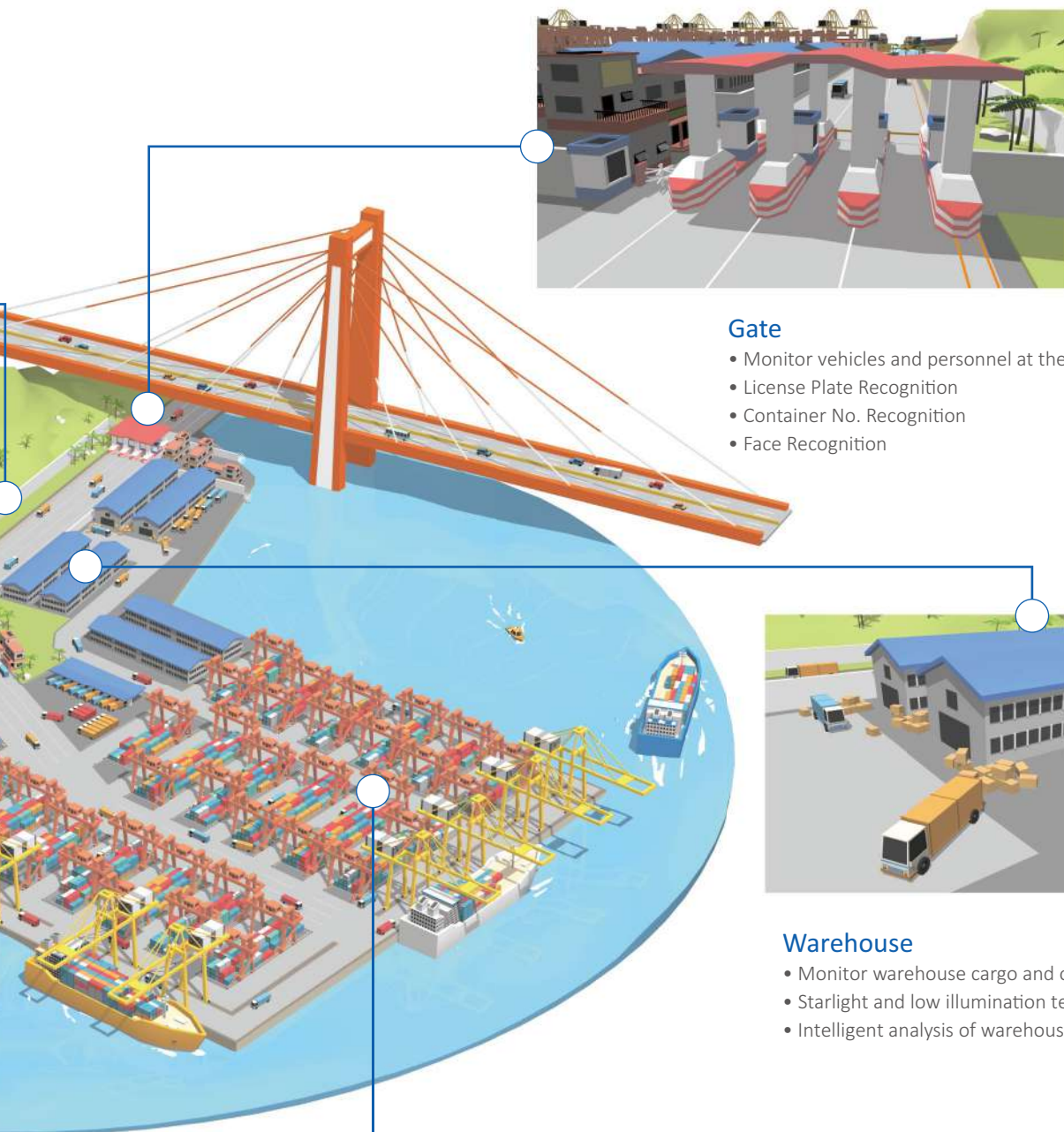• Monitor the seaport perimeter
• Thermal detection

Berth
• Monitor berth operations
• Anti-corrosion
• Container No. recognition

Shipping Lane
• Monitor ships in shipping lanes
• Thermal detection, long-range zoom, panoramic mode
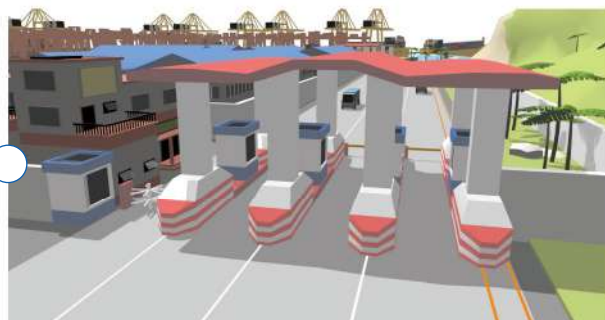
Gate

- Monitor vehicles and personnel at the gate
- License Plate Recognition
- Container No. Recognition
- Face Recognition

Warehouse

- Monitor warehouse cargo and operations in warehouse
- Starlight and low illumination technology
- Intelligent analysis of warehouse stock and movement

Yard

- Monitor yard operations in detail with 4K HD
- Explosion-proof design
- Anti-corrosion design

BUSINESS UNIT

- Uses image recognition algorithms to automatically recognize the license plate number
- Capture and recognize container numbers
- Container damage inspection
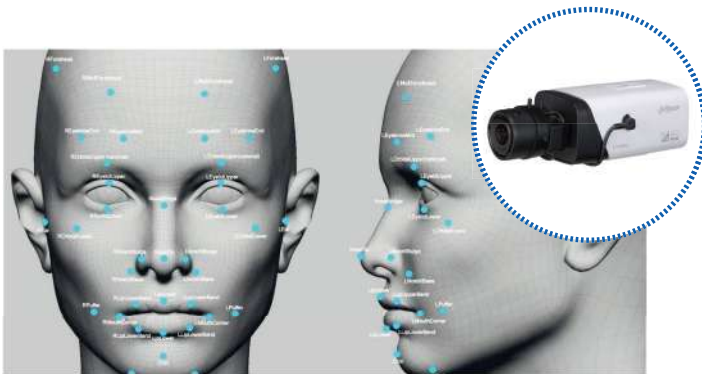
Face recognition

- Recognizes distinct facial characteristics with intelligent algorithms
- Set blacklist entries and alarms for certain facial characteristics and information (such as name, gender, date of birth, ID number, etc.)
- Track when and where a suspect appeared at a crime scene
- Generate an alarm when a blacklisted face is recognized and help police catch criminals

Shipping Lane

- Multi-lens camera with 180 degree panoramic video displays wide-angle video in real-time
- Seaport shipping lane can be viewed more clearly
- Effectively improve the performance of emergency response command
- Thermal camera can work around-the-clock and in all weather conditions

Berth

- PTZ with corrosion-resistant shell reliably monitors the handling of cargo
- Container No. recognition tracks containers at each point during loading / unloading

Yard

- PTZ camera with explosion-proof technology monitors the yard in real time
- Record container operation and provide images and video as evidence

Perimeter

- Configure intelligent intrusion analysis system to automatically detect trespassers and foreign objects
- Alarm is linked to video surveillance and pops up on VMS client
- System displays intruding object and trajectory on video image
- Thermal camera can work around-the-clock and in all weather conditions

Warehouse

- Configure cameras to monitor warehouse operations 24/7
- Cameras equipped with Starlight can record color images in dark environments with brightness as low as 0.006 Lux
- Thermal camera can detect abnormal heat sources to prevent fires

Control Center
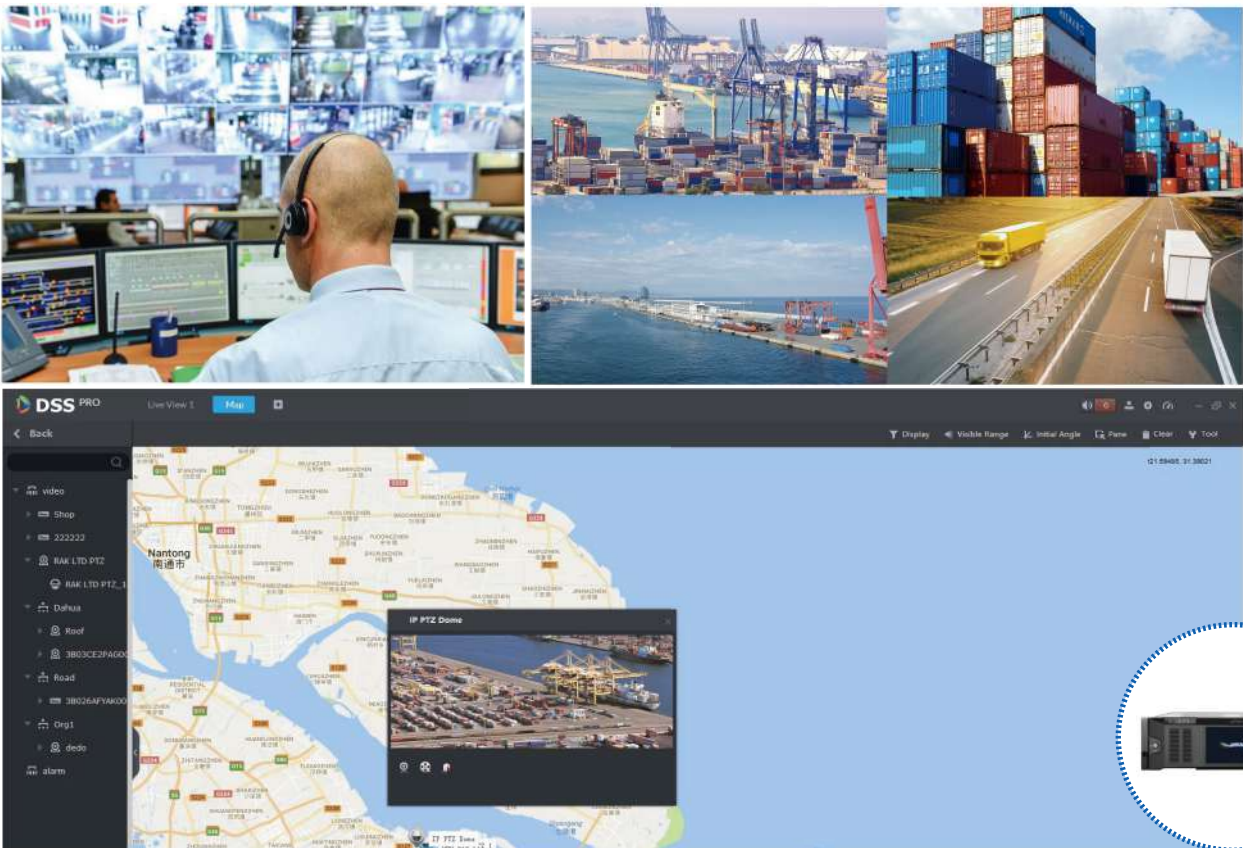
- Display map with satellite cloud images, hydrology and meteorology, weather, wave, tidal, and other image information and port operation information
- Manage all devices including viewing real-time video feed and playback
- Intelligent operation and management system allows centralized management of video surveillance, storage, display, and alarm systems
- Video synopsis displays summary of useful information for records sorted by subject and time

SYSTEM STRUCTURE AND OVERVIEW

System Overview

Highlights：

- Unified management: Centralized management of vehicles, containers, and personnel
- High definition: 4K
- Adaptive camera: Anti- corrosion, explosion-proof, panorama, thermal camera
- High integration: All-in-one, M series for display
- Intelligent functions: License Plate Recognition, Face Recognition, Container Number Recognition, perimeter intrusion alarm, intelligent behavior analysis, etc.
- Easy to upgrade: HDCVI technology is cost-effective and easy to install
- High storage reliability: Local SD card storage, RAID technology, N+M solution, and hot spare
- High system efficiency: E-map, self-diagnosis
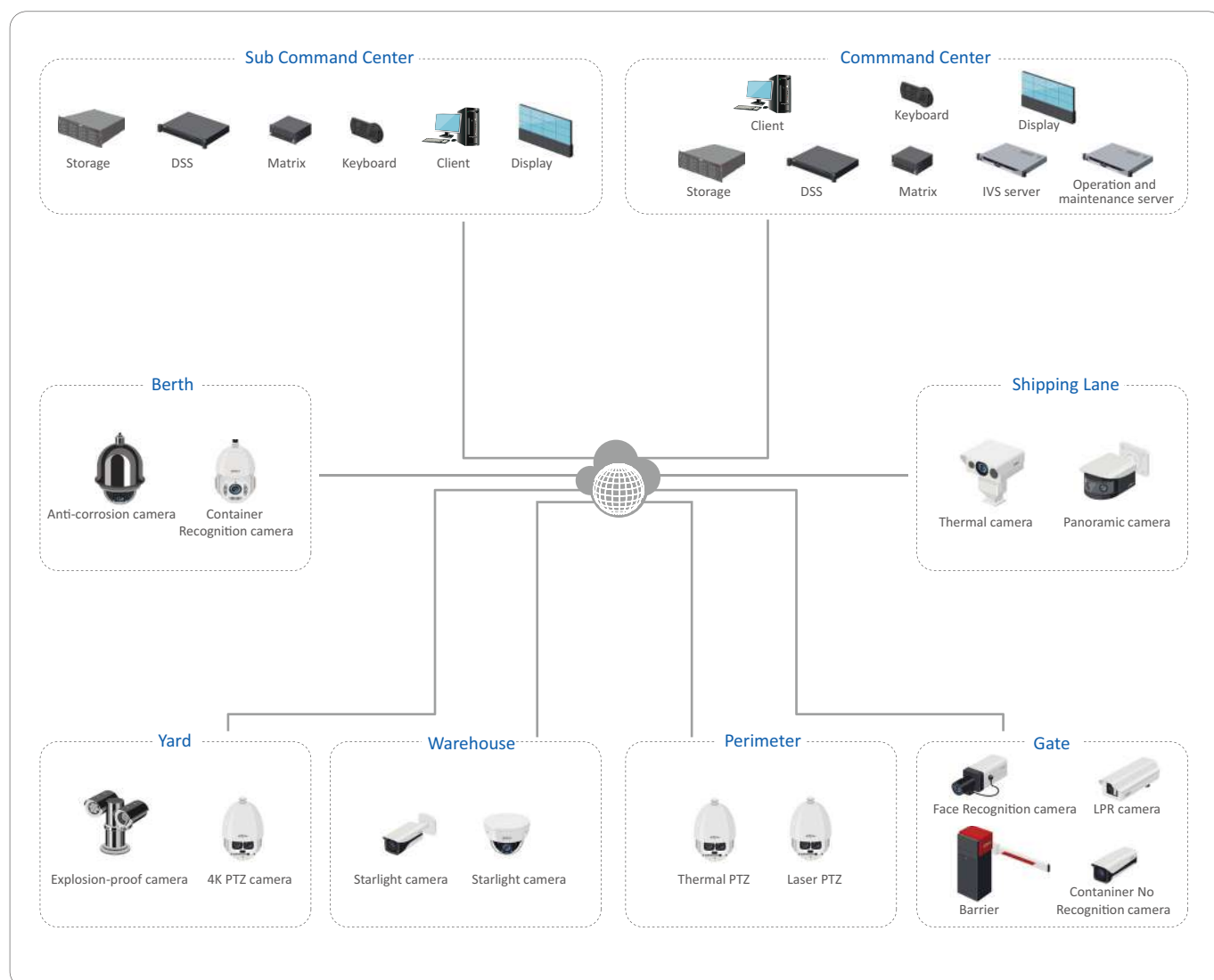
Highlighted Technology

- 4K Resolution: Provides 4 times the details of 1080p in the same scenario

4K Ultra HD Resolution (3840x2160P)

HD Resolution (1920x1080P)

- Panorama Mode: One camera with a 180 degree field of view seamlessly covers shipping lanes like never before

- Optical Defog: Advanced optical defog with IR filter can remove 98% of fog, allowing you to see clearly
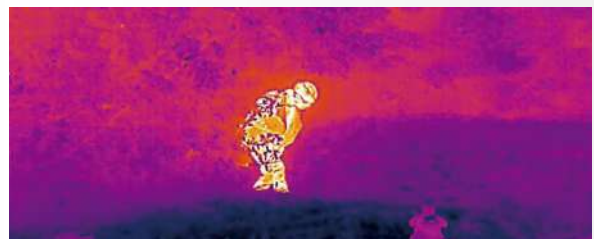

Optical defog OFF

Optical defog ON

- Thermal Detection: Better night effect and contrast effect for shipping line cargo area and perimeter

• License Plate Recognition: Recognize and record license plates and unauthorized actions. Blacklist alarm notifies command center if blacklisted plate is detected
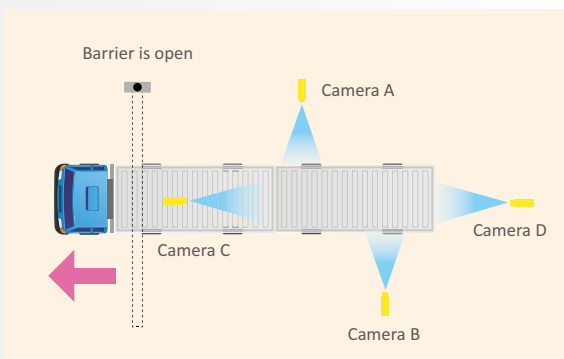

• Face Recognition: Face recording, blacklist alarm, and facial searches make it easy to keep track of personnel

• E-Map Display: Smart tools provide an easy to use and intuitive visual experience
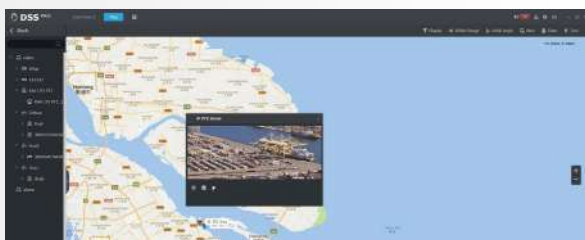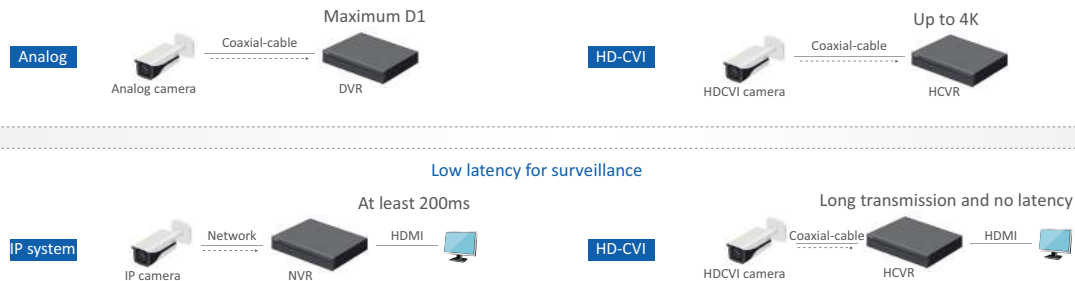

• Container Recognition: Recognize and record container numbers automatically and easily manage container data
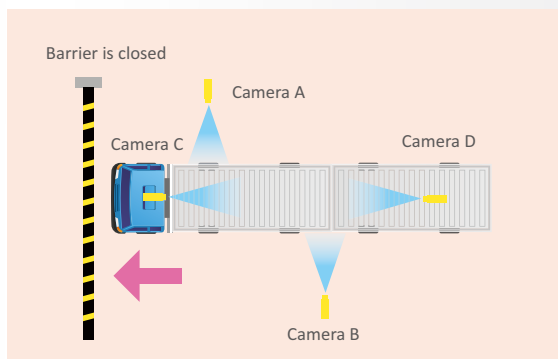
• HDCVI: High definition, low latency image paired with high scalability presents cost-effective system

Easy upgrade for existing analog system

Maximum D1

Up to 4K

Analog   Analog camera   Coaxial-cable → DVR

HD-CVI   HDCVI camera   Coaxial-cable → HCVR

Low latency for surveillance

At least 200ms

Long transmission and no latency

IP system   IP camera   Network → NVR   HDMI

HD-CVI   HDCVI camera   Coaxial-cable → HCVR   HDMI

• Intelligent Operation and Maintenance: Find malfunctioning devices instantly

Video quality diagnosis

Device
information diagnosis
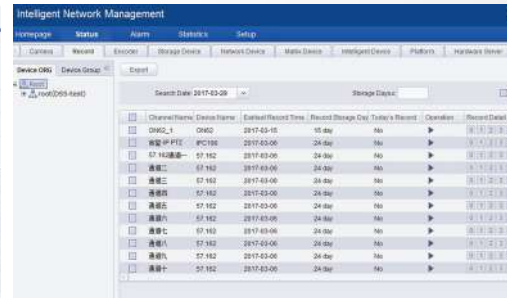
Storage status diagnosis

PRODUCT OVERVIEW

Product	Description	Gate	Shipping line	Berth	Yard	Warehouse	Perimeter	Control center
DHI-ITC237-PU1B-IR	2 Megapixel Full HD WDR Access ANPR Camera	●						
VTO2000A	Emergency Video Intercom	●						
DHI-ITC302-RU1A	3M Traffic Picture Capture Camera	●						
DH-IPC-HF8231F	2MP WDR Box Network Camera	●						
DH-PFW8601-A180	Multi-Lens Panoramic Network IR Camera		●					
DH-TPC-PT8620C	Thermal Network Tribrid PTZ		●					
DH-SD6AE240V-HNI	2MP 40x IR PTZ Network Camera				●			
DH-SD60230U-HNI-SL	2MP 30x Anti-Corrosion PTZ Network Camera			●				
DH-SD6AE830V-HNI	4K 30x IR PTZ Network Camera				●			

PRODUCT OVERVIEW

Product	Description	Gate	Shipping line	Berth	Yard	Warehouse	Perimeter	Control center
DH-EPC230U-PTZ-IR	2MP 30x Explosion-Proof IR PTZ Network Camera				●			
DH-TPC-SD8320-T	Thermal Network Hybrid Dome Camera						●	
TPC-BF5600	Thermal Network Bullet Camera					●		
DH-IPC-HFW5231E-Z	2MP WDR IR Bullet Network Camera					●		
DHI-DSS7016D	General Surveillance Management Center							●
DH-EVS7024S-R	24-HDD Enterprise Video Storage							●
DHL550UCM-ES	55'' Full-HD Video Wall Display Unit (Ultra Narrow Bezel 3.5mm)							●
DHI-M70-4U-E	Multi-Service Video Management Platform							●
DHI-IVS-F7500	Face Recognition Server							●

PRODUCT SHOWCASE

DHI-ITC237-PU1B-IR

- 1/2.8" 2Mp STARVIS™ CMOS
- Embedded with LPR algorithm inside the camera
- Embedded with whitelist database and barrier control
- Powerful 5-50mm manual lens and IR light
- WDR, IP66

VTO2000A

- 1/3" 1.3Mp CMOS,2.8mm lens
- 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

DHI-ITC302-RU1A

- All-in-One camera
- High performance CCD image sensor, high color reduction degree
- Embedded design, built-in a variety of algorithms
- Built-in thunder-proof module to prevent being struck by lightning
- Temperature-40°C~+80°C, humidity 10%~90%,
  suitable for harsh environments

DH-IPC-HF8231F

- 1/2.8" 2Mp STARVIS™ CMOS
- H.265&H.264 triple-stream encoding
- 50/60fps@1080P
- WDR(140dB), auto back focus(ABF)
- Micro SD memory, PoE

DH-IPC-PFW8601-A180

- Three 1/2.8" 2Mp STARVIS™ CMOS
- H.265/H.264 triple streams supported
- Max 25/30fps@4096x832
- Support 180-degree panoramic view
- IP67, IK10, PoE+

DH-TPC-PT8620C

- 640x512 VOx uncooled thermal sensor technology
- Athermalized Lens(thermal), autofocus
- 1/1.9" 2Mp progressive scan Sony CMOS
- Powerful optical zoom lens(Thermal&Visible)
- Laser range finder or laser illuminator optional
- Supports fire detection & alarm

PRODUCT SHOWCASE

DH-SD6AE240V-HNI

- 1/2.8" 2Mp STARVIS™ CMOS
- Powerful 40x optical zoom
- H.265 Encoding
- Max. 50/60fps@1080P
- Hi-PoE, IP67, IK10

DH-SD60230U-HNI-SL

- 1/2.8" 2Mp STARVIS™ CMOS
- Powerful 30x optical zoom ,Starlight
- Max. 50/60fps@1080P, H.265
- PoE+, IP68, IK10, NEMA 4X report
- Material: 316L Stainless steel
- Anti-corrosion

DH-SD6AE830V-HNI

- 1/1.7" 12Mp STARVIS™ CMOS
- Powerful 30x optical zoom
- Max. 30fps@4K
- IR distance up to 200m
- IP67, IK10, Hi-PoE

DH-EPC230U-PTZ-IR

- 1/2.8" 2Mp STARVIS™ CMOS
- Powerful 30x optical zoom
- 316L stainless steel housing
- H.265/H.264 Triple-stream Encoding
- Max. 50/60fps@1080P
- Explosion Proof

DH-TPC-SD8320-T

- 1/1.9" 2Mp progressive scan Sony CMOS
- 336x256 VOx uncooled thermal sensor technology
- Powerful 30x optical zoom
- Supports fire detection & alarm
- Supports temperature measurement
- Micro SD memory, IP66

TPC-BF5600

- 640x512 vox uncooled thermal sensor technology
- Athermalized Lens(thermal),Focus-free
- Supports Fire detect&alarm
- Various lens optional(9/13/19/25/35mm)
- Micro SD memory, IP67,POE

PRODUCT SHOWCASE

DH-IPC-HFW5231E-Z

- 1/2.8" 2Mp progressive scan STARVIS™ CMOS
- 50/60fps@1080(1920×1080)
- WDR(120dB), day/night(ICR), 3DNR, AWB, AGC, BLC
- Max. IR LEDs Length 50m
- Micro SD memory, IP67, PoE

DHI-DSS7016D

- High performance stream media transfer and storage capability
- Supports distributed and cascade deployment
- Supports local storage and IP-SAN storage
- Supports max 2000 channels
- Supports management of 200 accounts and 700Mbs transfer capabilities

DH-EVS7024S-R

- Intel processor
- Max 768 IP camera inputs
- Max 1536Mbps incoming/recording bandwidth
- 24 HDDs, SAS/SATA, hot-swap, RAIDs, hot-spare
- iSCSI and Mini SAS for expanded storage space
- Redundant power

DHL550UCM-ES

- 55'' full-HD video wall display
- Industrial level DID LCD panel, suitable for extensive 7×24 continuous works
- Ultra-narrow 3.5mm side LCD patchwork
- High contrast and high brightness
- Built-in picture splicing function
- Abundant interfaces HDMI, DVI, VGA, BNC, supports video loop

DHI-M70-4U-E

- Easy and flexible configuration with pluggable card module design
- 80ch@1080P or 320ch@D1 signal encoding
- 80ch@4K or 320ch@1080P or 720ch@720P or 1500ch@D1 signal decoding
- Supports max 60 screens splicing
- 6 RJ-45 gigabit network ports for matrix control, preview and online central storage

DHI-IVS-F7500

- Combines face detection, face image comparison, and face image search with database functions
- Dynamic comparison register library supports up to 100,000 images
- Up to 4 channels simultaneous detection and comparison
- Search image database by time & location
- Detect faces in designated regions and enable tracking

SUCCESS STORIES

Pescara Harbor in Italy

Dahua Technology and its megapixel solution successfully secured the Pescara Port. Dahua solutions overcame unpleasant weather conditions which threatened to corrode devices, shorten their lifespan, and affect network transmissions.

• Dahua cameras provided a comprehensive solution for all types of surveillance scenarios including superb night surveillance.

• Dahua NVR devices satisfied storage requirements, and their RAID functionality enhanced system reliability and stability.

• The system adopts a ring networking structure with optical fiber, and guaranteed an adequate bandwidth at 108Mbps. The radio transmission system was configured at an access point of dual band 2.4/5.8GHz.

Suva Harbor in Fiji

Dahua completed video surveillance for Suva Harbor in Fiji to guarantee the security of daily operation work.

• Multiple types of IP cameras met the various requirements of different scenes, including the outdoor working area, office hall, etc.

• 5.8G wireless transmission overcame need for wiring and ensured reliable transmission speeds.

Manila North Harbor in the Philippines

Dahua provided a video surveillance solution for Manila North Harbor(PHMNN). Dahua installed dozens of PTZ cameras to guarantee the security of daily operations.

Hainan Yangpu Harbor in China

Dahua Technology and its megapixel solution successfully secured Hainan Yangpu Harbor through an HD surveillance solution, including HD IP cameras, encoders, IP storage and VMS platform.

• Hundreds of network cameras and speed domes

• Back end eco-savvy NVR and super NVR at monitoring center for back up storage.

ENABLING A SAFER SOCIETY
AND SMARTER LIVING

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