

**CHENGWEI TECHNOLOGY**  
**THINK MORE FOR YOUR SAFETY**



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UVSS

**UNDER VEHICLE SURVEILLANCE SYSTEM**



**PROFESSIONAL PROVIDER OF  
CHECKPOINT SECURITY SOLUTION**



We are a professional checkpoint security solution provider,  
delivers cutting-edge security solutions to the valued customers all over the world.

We focus on customer benefits, and strive to supply the best solutions to our partners and customers.

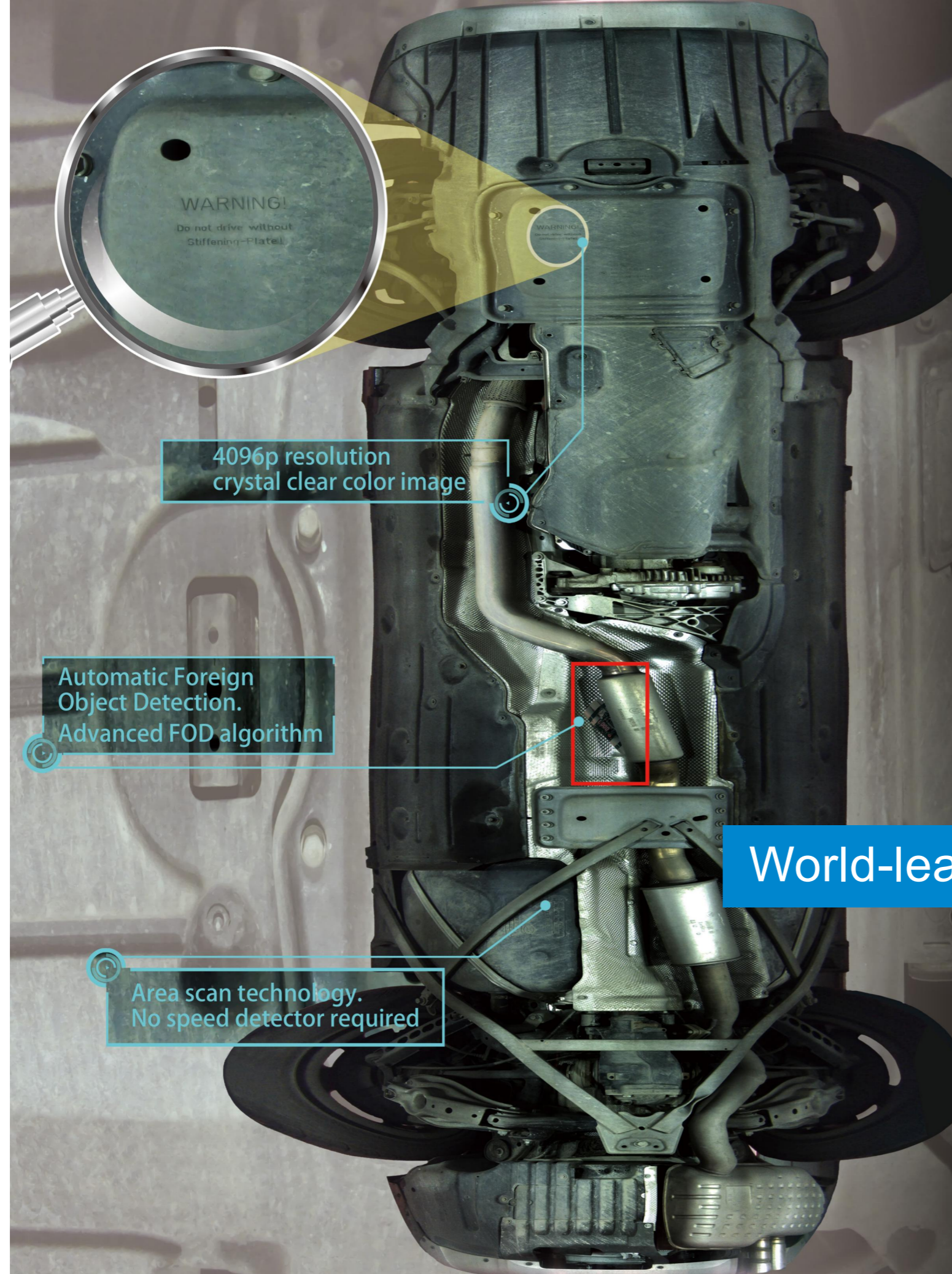
# Introduction

The whole solution includes under vehicle scanning system (UVSS), under vehicle video surveillance system, number plate recognition (NPR), driver face recognition, IP CCTV, etc.

The system is ideal for government, military, custom, hotel and transportation corporation facility requiring security check points for vehicles such as vans, tractor trailers, buses and passenger vehicles, even for trains.

The core system in the solution, UVSS adopts the world's leading intelligent area scanning camera, to effectively scan and inspect in real time the under carriage of vehicles to search and analyze images for explosive devices, suspicious objects or contraband such as drugs and weapons.





4096p resolution  
crystal clear color image

Automatic Foreign  
Object Detection.  
Advanced FOD algorithm

Area scan technology.  
No speed detector required

## World-leading proprietary technology

# 4K Area scan

Comparing with the outdated ordinary line scan camera in the traditional system, the system adopts new generation intelligent area scan camera technology.

### Support vehicle changing speed while scanning

Built in ISP SPEED DETECTOR (ISD), there for no strict requirement for the speed of the vehicle. The image quality will not be affected no matter vehicle changing speed, or even stop and move.

### Vehicle speed up to 60 km/h

Based on ultra high frame rate sensor, together with specially designed ASIC like processor, area scan technology makes it possible for UVSS to capture high speed vehicle up to 60 km/h.

### 4096p image resolution

High resolution color image allows zoom in to all details in concern.

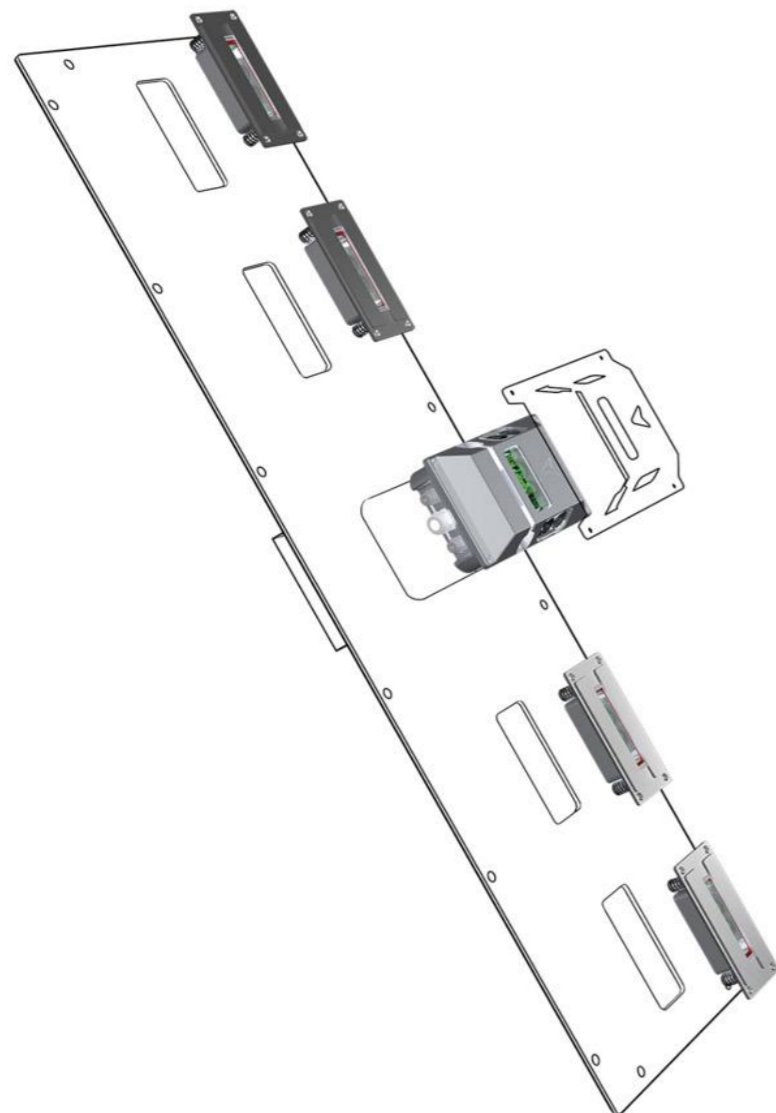
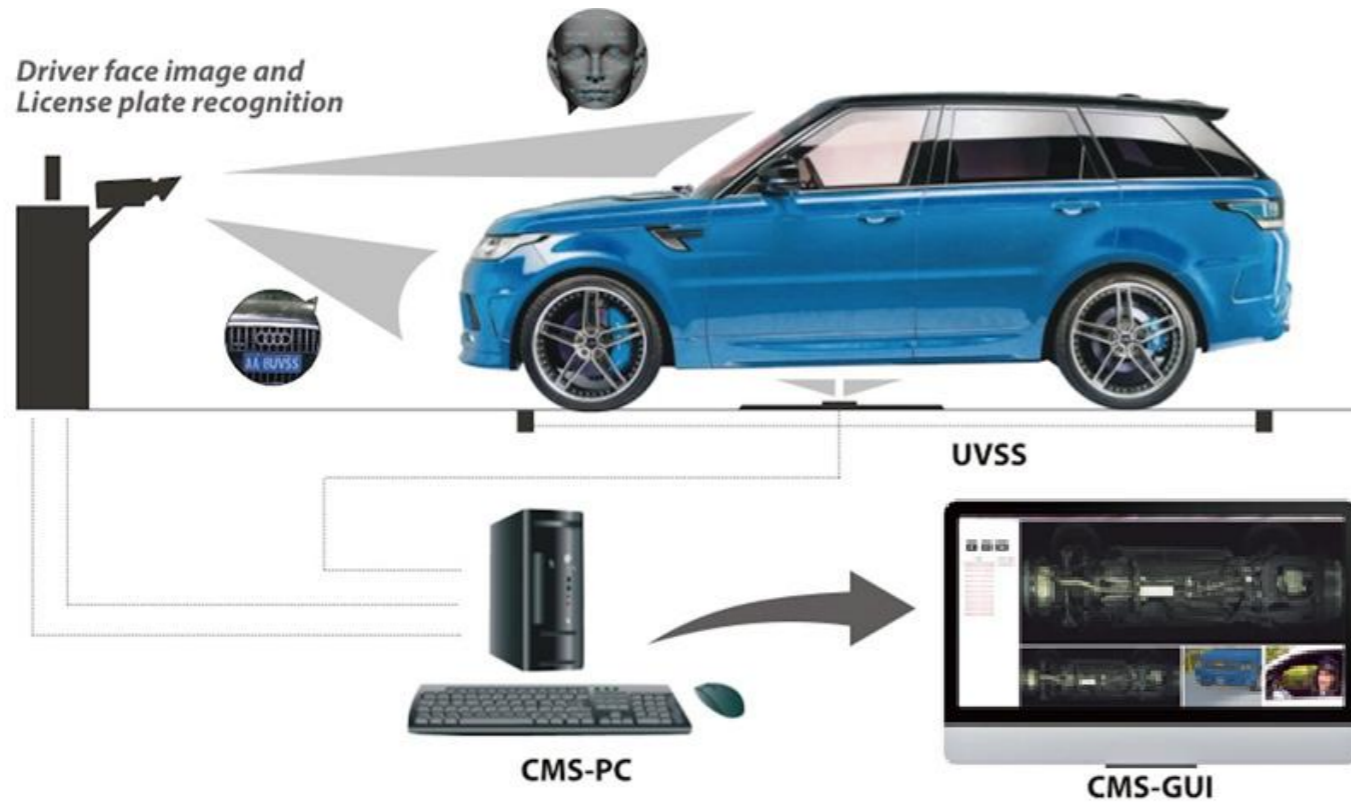


Linear Scan

**VS**



Area Scan



## Modular design

### All-in-one camera technology

Finish image processing and generate whole under carriage image in camera itself, no need the help of computer.

Analysis speed of vehicle by camera itself, no need additional vehicle speed measurement equipment.

With simple http standard API interface, UVSS can be easily integrated into your own system.

Auto exposure image sensor, automatically adjust brightness, without operator intervention, make the system works well for different height undercarriages, such as vans, tractor trailers, buses and passenger vehicles.



Sedan



Truck



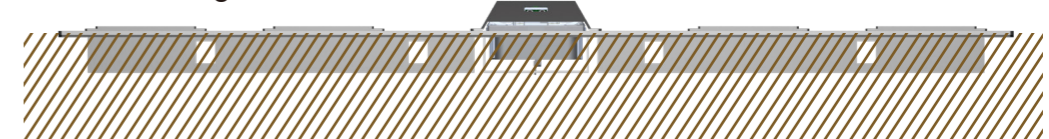
Train

All in one camera

### Low construction and maintenance cost

Super slim design, as slim as 6 cm, save lot of construction time and cost.

Modular design, fast maintenance in less than 10 minutes.





## Proprietary FOD algorithm

### World-leading AI technologies

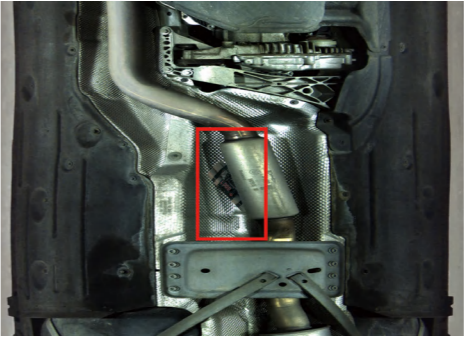
Advanced AI technology algorithm specially developed for undercarriage analysis.

#### **Undercarriage big data, identifies the vehicle's model**

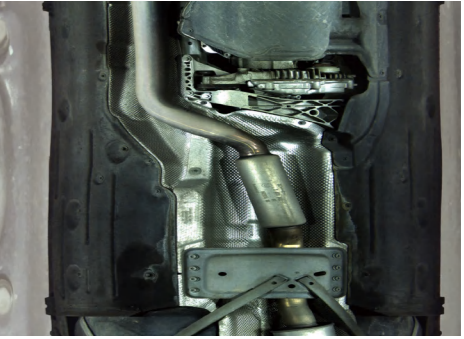
Deep Neural Networks (DNN) technology provide the capability to identify the vehicle's model. The self-learning database provides big-data for car analytics.

#### **Proprietary FOD (Foreign Object Detection) algorithm**

The system is capable of automatically identifying and highlighting any change or difference between a newly scanned vehicle's undercarriage and the undercarriage of the reference image of the same or similar vehicle without the intervention of a system operator.



Newly scanned



Reference image

# PRODUCTS

- Professional Fixed UVSS
- Professional Mobile UVSS
- Lite Fixed UVSS
- Lite Mobile UVSS
- Under-vehicle Scanning Robot
- Face Recognition Camera
- Number Plate Recognition Camera
- Management Software
- Where our solutions are used
- Product case

## Professional Fixed UVSS

**MODEL NO: UVS-PF500**

Professional Fixed UVSS adopts the most advanced area scanning technology, it is designed for places where have high security requirements, like government, military, custom, etc.

### Features:

- Fixed usage
- Color Area Scan technology
- Capture even at speeds up to 60km/h
- High resolution imaging up to full 4096p
- No limits on the length of a scan
- All-in-one ground camera solution, no need expensive server
- All weather conditions for the harshest environments
- Adopt the advanced intelligent camera, encoding all completed images by camera itself



### Specifications:

Performance	
Capture Accuracy	> 99.9%
Speed Limit	0 ~ 60km/h
Intelligent Analysis	Auto
Height of Vehicle Chassis	50 ~ 3000mm
Width of Vehicle Chassis	≤ 4500mm
Length of Vehicle Chassis	No limit
Imageing Time	< 1s
System Extension	NPR & Face Recognition
Foreign Object Detection	Optional
Load Bearing Capacity	60 Tonnes

Camera	
Sensor Resolution	4096P
Image Resolution	≥ 10000 x 4096
View Angle of Lens	> 170°
White Balance	Auto
Exposure	Auto

Network	
Speed	Gigabit Ethernet
Protocol	IPv4

Electrical	
Power Supply	DC24V/150W

Constructions	
Dimensions	1236mm x 320mm x 105mm
Weight	45kg

Environment	
Operating Temperature	-40℃~+70℃
Protection level	IP68

# Professional Mobile UVSS

**MODEL NO: UVS-PM510**

Professional Mobile UVSS adopts the most advanced area scanning technology, it is designed for places where have high security requirements, like government, military, custom, etc.

## Features:

- Surface mount
- Color Area Scan technology
- Capture even at speeds up to 30km/h
- High resolution imaging up to full 4096p
- No limits on the length of a scan
- All-in-one ground camera solution, no need expensive server
- All weather conditions for the harshest environments
- Adopt the advanced intelligent camera, encoding all completed images by camera itself



## Specifications:

Performance	
Capture Accuracy	> 99.9%
Speed Limit	0 ~ 30km/h
Intelligent Analysis	Auto
Height of Vehicle Chassis	80 ~ 3000mm
Width of Vehicle Chassis	≤ 4500mm
Length of Vehicle Chassis	No limit
Imageing Time	< 1s
System Extension	NPR & Face Recognition
Foreign Object Detection	Optional
Load Bearing Capacity	40 Tonnes

Camera	
Sensor Resolution	4096P
Image Resolution	≥ 10000 x 4096
View Angle of Lens	> 170°
White Balance	Auto
Exposure	Auto

Network	
Speed	Gigabit Ethernet
Protocol	IPv4

Electrical	
Power Supply	DC24V/150W
Constructions	
Dimensions	620mm x 320mm x 60mm
Weight	15kg
Environment	
Operating Temperature	-40℃~+70℃
Protection level	IP68

# Lite Fixed UVSS

**MODEL NO: UVS-LF500**

Lite fixed UVSS is an entry level under vehicle scanning solution. It adopts also intelligent area scan technology, while it is a cost effective choice for users.

## Features:

- Fixed usage
- Color Area Scan technology
- Capture even at speeds up to 30km/h
- High resolution imaging up to full 1024p
- No limits on the length of a scan
- All-in-one ground camera solution, no need expensive server
- All weather conditions for the harshest environments
- Adopt the advanced intelligent camera, encoding all completed images by camera itself



## Specifications:

Performance	
Capture Accuracy	> 99.9%
Speed Limit	0 ~ 30km/h
Intelligent Analysis	Auto
Height of Vehicle Chassis	50 ~ 3000mm
Width of Vehicle Chassis	≤ 4500mm
Length of Vehicle Chassis	No limit
Imageing Time	< 1s
System Extension	NPR & Face Recognition
Foreign Object Detection	Not support
Load Bearing Capacity	60 Tonnes

Camera	
Sensor Resolution	1024P
Image Resolution	≥ 2000 x 1024
View Angle of Lens	> 170°
White Balance	Auto
Exposure	Auto

Network	
Speed	Gigabit Ethernet
Protocol	IPv4

Electrical	
Power Supply	DC24V/150W
Constructions	
Dimensions	1236mm x 320mm x 105mm
Weight	45kg
Environment	
Operating Temperature	-40℃~+70℃
Protection level	IP68

## Lite Mobile UVSS

**MODEL NO: UVS-LM510**

Lite Mobile UVSS is an entry level under vehicle scanning solution. It adopts also intelligent area scan technology, while it is a cost effective choice for users.

### Features:

- Surface mount
- Color Area Scan technology
- Capture even at speeds up to 30km/h
- High resolution imaging up to full 1024p
- No limits on the length of a scan
- All-in-one ground camera solution, no need expensive server
- All weather conditions for the harshest environments
- Adopt the advanced intelligent camera, encoding all completed images by camera itself



### Specifications:

Performance	
Capture Accuracy	> 99.9%
Speed Limit	0 ~ 30km/h
Intelligent Analysis	Auto
Height of Vehicle Chassis	80 ~ 3000mm
Width of Vehicle Chassis	≤ 4500mm
Length of Vehicle Chassis	No limit
Imageing Time	< 1s
System Extension	NPR & Face Recognition
Foreign Object Detection	Not support
Load Bearing Capacity	40 Tonnes

Camera	
Sensor Resolution	1024P
Image Resolution	≥ 2000 x 1024
View Angle of Lens	> 170°
White Balance	Auto
Exposure	Auto

Network	
Speed	Gigabit Ethernet
Protocol	IPv4

Electrical	
Power Supply	DC24V/150W
Constructions	
Dimensions	530mm x 337mm x 76mm
Weight	15kg
Environment	
Operating Temperature	-40 C ~ +70 C
Protection level	IP68

## Video UVSS

**MODEL NO: UVI-C320**

2-megapixel resolution, water proof design.

### Features:

- Fixed installation
- Real time video output
- High resolution imaging up to full 1080p
- Support standard Onvif protocol
- Powerful LED illuminator
- All weather conditions for the harshest environments



### Specifications:

Performance	
Capture Accuracy	> 99.9%
Speed Limit	0 ~ 5km/h
Intelligent Analysis	Auto
Height of Vehicle Chassis	80 ~ 1500mm
Width of Vehicle Chassis	≤ 2000mm
Length of Vehicle Chassis	No limit
Imageing Time	< 1s
System Extension	NPR & Face Recognition
Foreign Object Detection	Optional
Load Bearing Capacity	60 Tonnes

Camera	
Sensor Resolution	1080P
View Angle of Lens	> 120°
White Balance	Auto
Exposure	Auto

Network	
Speed	Gigabit Ethernet
Protocol	IPv4

Electrical	
Power Supply	DC24V/150W
Constructions	
Dimensions	420mm x 320mm x 100mm
Weight	12kg
Environment	
Operating Temperature	-40 C ~ +70 C
Protection level	IP68

# Under-vehicle Scanning Robot

**MODEL NO: CW-UVS-ROBOT01**

The under-vehicle scanning robot adopts the industry's leading intelligent scanning technology to scan the chassis of stationary vehicles, which is widely used in government departments, military, customs, parking lots. etc.

## Features:

- Color Area Scan technology
- Scanning speed 30cm/s
- 4K resolution
- Adopt the advanced intelligent camera
- Encoding all completed images by camera itself



## Specifications:

Performance	
Capture Accuracy	> 99.9%
Scanning speed	≥30cm/s
Remote control distance	≥ 30m
Height of Vehicle Chassis	100~ 3000mm
Width of Vehicle Chassis	≤4500mm
Length of Vehicle Chassis	No limit
Fully charged working time	≥ 5h
System Extension	NPR & Face Recognition
Undercarriage image comparison	Support
The maximum number of images saved	≥ 100000

Camera	
Sensor Resolution	4096P
Infrared illumination	≥ 10000x4096
View Angle of Lens	> 170°
White Balance	Auto
Exposure	Auto

Tablet	
Display	11-inch ISp touch screen
Protocol	IPv4

Constructions	
Dimensions	520mm*500mm*100mm
Weight	8kg

Constructions	
Operating Temperature	-40°C~+70°C
Protection level	IP68

# Face Recognition Camera

**MODEL NO: FRC2231T**

Featuring a True Day/Night, 2-megapixel resolution HD camera in parking and access control environment, capture the driver's face clearly in low light condition.

## Features:

- Smart Codec (H.265+ & H.264+)
- High performance CCD image sensor, high color reduction degree, high sensitivity
- Built-in polarization filter switching module, fortalking clear image of driver face
- Temperature -30°C~+80°C, Humidity 10%~90%, suitable for the rough work scene. Wide working temperature, IP67 and superior performance for outdoor



## Specifications:

Performance	
Capture Accuracy	> 99.9%
Speed Limit	0 ~ 60km/h
Intelligent Analysis	Auto
Focal Length	4.7 ~ 47mm
Focal control	Manual
Focal Distance Range	10-40m
IR Distance	40m
Scanning System	Progressive

Camera	
Sensor Resolution	1080P
Image Resolution	≥ 1920 x 1080P
View Angle of Lens	H:100°~37°; V: 55°~21°
White Balance	Auto/Manual
Exposure	Auto

Electrical	
Power Supply	AC220V/Max40W

Network	
Speed	Gigabit Ethernet
Protocol	IPv4/IPv6

Constructions	
Dimensions	244.1mm×79mm×75.9mm
Weight	1kg

Environment	
Operating Temperature	-30°C~+80°C
Protection level	IP67

# Number Plate Recognition Camera

## MODEL NO: NPC

Featuring a True Day/Night, 2-megapixel resolution LPR camera in parking and access control environment, video detect and recognize the plate in low speed less than 40km/h with embedded LPR algorithm.

### Features:

- Embedded with NPR algorithm inside the camera (not for all countries)
- Support plate cutout, overview picture snapshot and video recording
- Embedded with whitelist and blacklist database
- Powerful 4.7-47 mm motorized lens and IR light, ideal for long distance ANPR as for as 40m
- Wide working temperature, IP67 and superior performance for outdoor applications



### Specifications:

Camera	
Compression	H.265/H.264M/H.264H/H.264B
Resolution	1080P(1920x1080)
Frame Rate	1080P(1 ~ 25/30fps)
Bit Rate Control	CBR VBR
Bit Rate	H.264: 80K bps~ 10Mbps
Day/Night	Auto(ICR) / Color / B/W
BLC Mode	BLC,HLC,WDR(140db)
White Balance	Auto/Manual
Gain Control	Auto/Manual
Noise Reduction	3D
Smart IR	Support
Audio Interface	Input/Output 1 Input / 1 Output
RS485	N/A
Alarm	2/1 channel In/Out

Network	
Ethernet	RJ-45 (10/100Base-T)
Protocol	IPv4/IPv6, HTTP, TCP/IP, UDP, NTP, DHCP, DNS
Interoperability	CGI, Onvif
Max. User Access	20
Edge Storage	Micro SD, Max 128GB Status Display Local PC for Instant Recording
Web Viewer	IE8,IE9,IE10,IE11

Electrical	
Power Supply	POE+ (802.3at)
Power Consumption	17W

Environmental	
Operating Conditions	-30°C~+60°C, Less than 95% RH
Ingress Protection & Vandal Resistance	IP66

Construction	
Dimensions	425 x 160 x 146(mm)
Net Weight	4.2kg

# Management Software

## MODEL NO: CMS

CMS Management Software is a powerful and easy to use software for both basic and advanced needs. Except regular user and device management, it has a lot of optional advanced intelligent features, such as Undercarriage Recognition, Vehicle Type Recognition, Foreign Object Detection (FOD), Face Recognition, Number Plate Recognition(NPR), and etc.

### Features:

- AI technology
- FOD based on plate number
- FOD based on database
- Fast FOD algorithm(≤ 3s)
- Plate number blacklist & whitelist
- Face recognition
- Face blacklist & whitelist
- Full control to blacklist & whitelist
- Watch livemedia
- Mutiple devices
- No limit to logined users
- User group management



### Specifications:

Performance	
Image Upload Time	< 1s
Vehicle Type Recognition	Auto
FOD Time	≤ 3s
Face Recognition Time	≤ 3s
Warning Type	Sound/popup
Space Control	Auto
User Control	Manual
Language	customizable
Black/white list Operation	Add/edit/delete
Number of Black/white list	2000
Number of Images Group	Based on harddisk space
FR Sensitivity Range	0-100
FOD Sensitivity Range	0-8
Display	Auto fit

Recommended Server Configurations	
Operation System	Windows 10
Architecture	AMD64
Memory	16GB
Hard Disk	≥ 100G
Processor	≥ Intel I5
Screen Resolution	≥ 1280 x 720

# Where our solutions are used

# Product case



**Terrorist attack**



**Stowaway**



**Security checkpoint**



**Boder control**



**Prison break**



**Illegal undercarriage modification**



**Government office**



**Military base**