

EASYVIGIL
UVIS

POWERED BY

ATRONIC
SOLUTION RE IMAGINED



01 Introduction of System Components

TRIGGER MODULE (COIL): WHEN THE VEHICLE PASSES THROUGH THE COIL, THE CORRESPONDING TRIGGER SIGNAL IS SENT TO THE CONTROLLER.

CAR DETECTOR: CONSISTS OF LINEAR ARRAY CAMERA MODULE, LED LAMP MODULE AND PROTECTIVE COVER. IT IS RESPONSIBLE FOR COLLECTING CHASSIS PICTURES WHEN THE VEHICLE PASSES THROUGH, STARTING TO COLLECT WHEN THE VEHICLE ENTERS, STOPPING COLLECTING WHEN THE VEHICLE LEAVES, AND FINALLY SYNTHESIZING A COMPLETE CHASSIS PICTURE TO THE MAIN CONSOLE THROUGH THE CONTROLLER SWITCH MODULE.

ENTRANCE AND EXIT CAMERA: WHEN THE VEHICLE ENTERS OR LEAVES THE ENTRANCE AND EXIT, THE VEHICLE LICENSE PLATE INFORMATION IS RECOGNIZED AND COLLECTED, AND THE VEHICLE LICENSE PLATE INFORMATION IS TRANSMITTED TO THE MAIN CONSOLE THROUGH THE CONTROLLER SWITCH MODULE AFTER THE VEHICLE PASSES THROUGH.

CONTROLLER: WHEN THE VEHICLE ENTERS, SEND THE SIGNAL TO THE ENTRANCE AND EXIT CAMERA TO IDENTIFY AND COLLECT THE VEHICLE LICENSE PLATE INFORMATION AND UPLOAD THE IDENTIFIED VEHICLE LICENSE PLATE INFORMATION TO THE MAIN CONSOLE AND THE CONTROL VEHICLE DETECTOR TO START COLLECTING THE CHASSIS IMAGE;

MAIN CONTROL DESK: IS AN INDUSTRIAL COMPUTER INSTALLED WITH THE SOFTWARE MANAGEMENT PLATFORM DEVELOPED BY, WITH THE FUNCTIONS OF DISPLAYING THE COLLECTED CHASSIS PICTURES, RECORDING VEHICLE LICENSE PLATE INFORMATION, VEHICLE INFORMATION MANAGEMENT, VEHICLE ENTRY AND EXIT CHASSIS PICTURE COMPARISON, CHASSIS HISTORY PICTURE COMPARISON AND SO ON.

02 UVSS Primary Applications



Industrial Enterprises



Critical Infrastructure &
Restricted Access Facilities



Custom Control & Border
Management



State Institutions



Vehicle Check Points at Airports
and Seaports



Cultural & Sports Venues,
Public Parking Areas etc.

03 Manual Inspection Challenges

- PLACES SECURITY PERSONNEL IN CLOSE PROXIMITY TO POTENTIAL DANGER
- PRONE TO HUMAN ERROR THAT CAN FAIL TO IDENTIFY HIDDEN OBJECTS
- OTHER METHODS CAN BE UNRELIABLE, PRODUCING MANY FALSE POSITIVES
- REQUIRES VEHICLES TO BE STATIONARY, SLOWING THE FLOW OF TRAFFIC
- DEMANDS HEAVY PERSONNEL RESOURCES

04 Use Cases Include



Financial



Airports



Borders



Prisons



Police



Seaports



Embassies



Energy



Government



Military

05 System Architecture

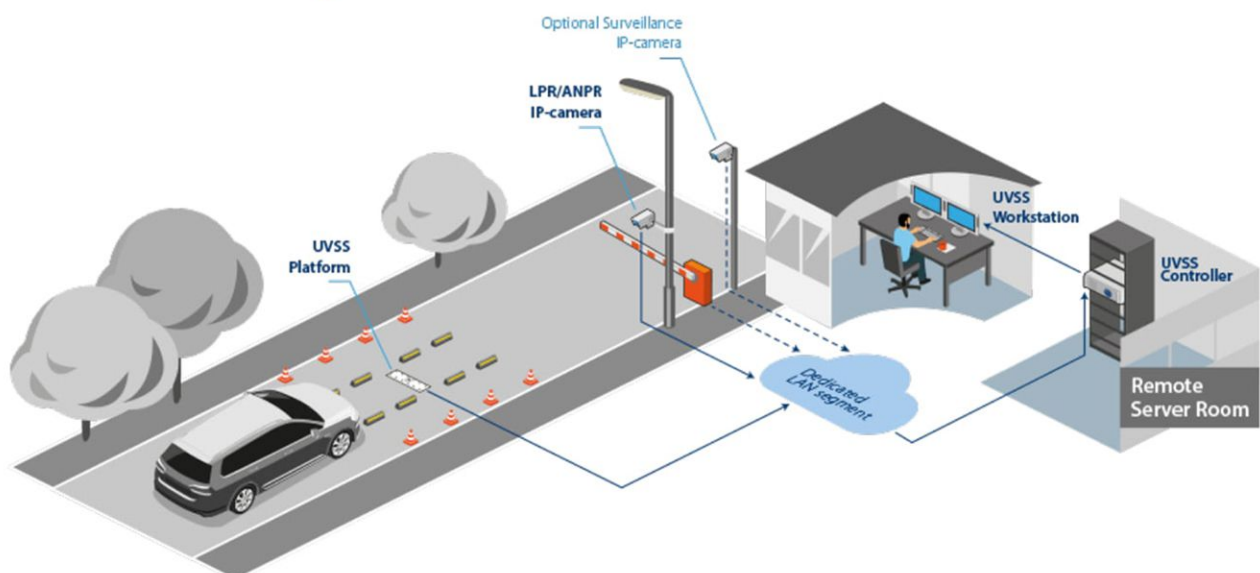
HARDWARE

- UVSS PLATFORM - IP68 SCANNING SYSTEM WITH AREA SCAN MACHINE VISION CAMERA AND FISH-EYE LENS (MOUNTED ON THE ROADWAY).
- UVSS CONTROLLER - PROCESSING SERVER WITH DATA STORAGE AND INTEGRATED VIDEO MANAGEMENT PLATFORM SECUROS ENTERPRISE.
- LPR/ANPR CAMERA.
- OPERATOR WORKSTATION.

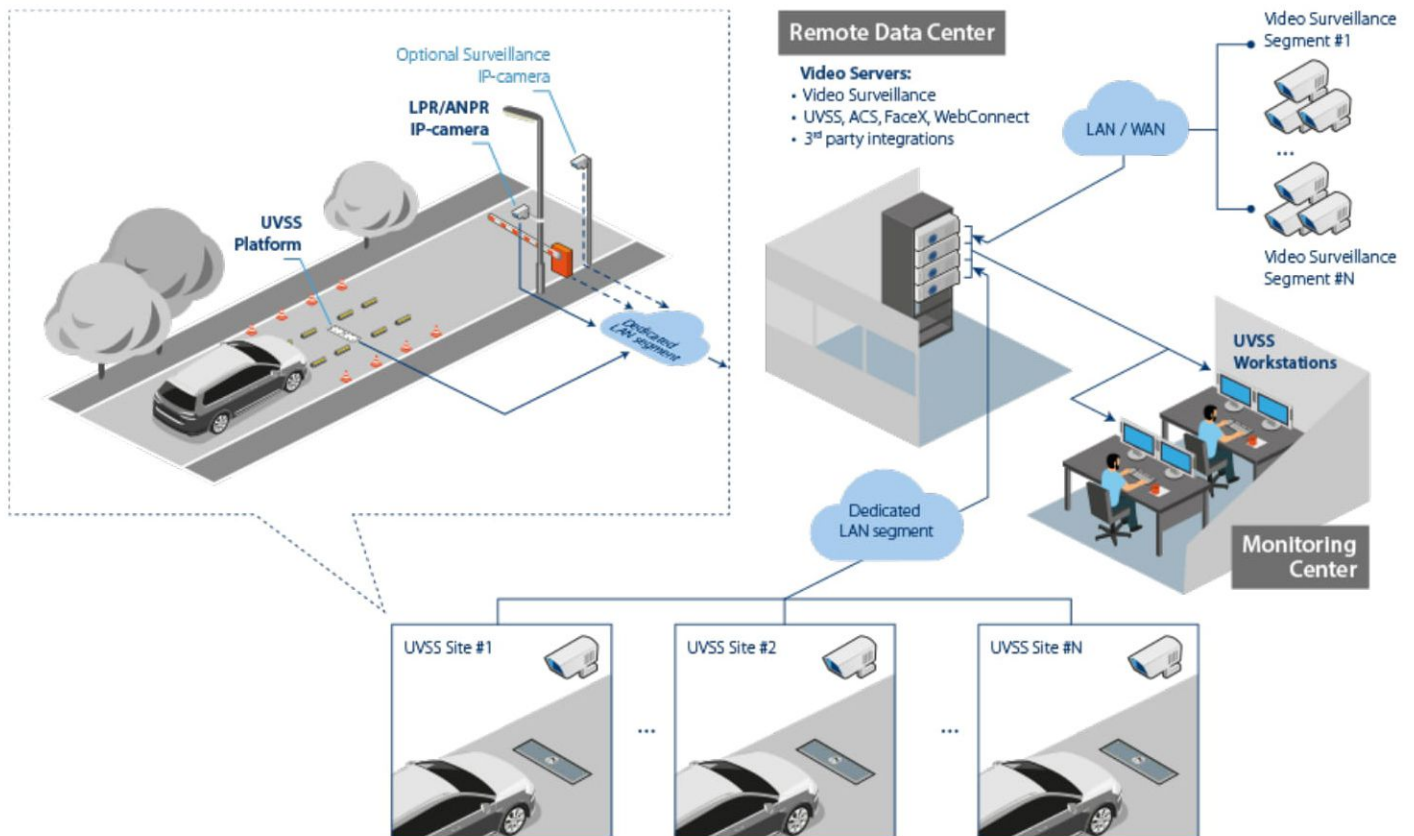
SOFTWARE

- VMS PROVIDING VIDEO MONITORING, VIDEO RECORDING, AND HARDWARE-SOFTWARE SYSTEM MANAGEMENT, ALLOWING SURVEILLANCE OF THE UNDERCARRIAGE OF VEHICLES AND CROSS-REFERENCING WITH VIDEO ARCHIVE.
- AUTO PROVIDING LICENSE PLATE RECOGNITION, ADVANCED SEARCH AND WATCHLIST CAPABILITIES, ETC.
- CUSTOMIZABLE PROFESSIONAL SECUROS UVSS OPERATOR GRAPHICAL USER INTERFACE.
- INTEROPERABILITY AND INTEGRATION WITH 3RD-PARTY DEVICES AND SYSTEMS VIA EMBEDDED SECUROS APIS.

06 Base System Architecture



07 Distributed System Architecture

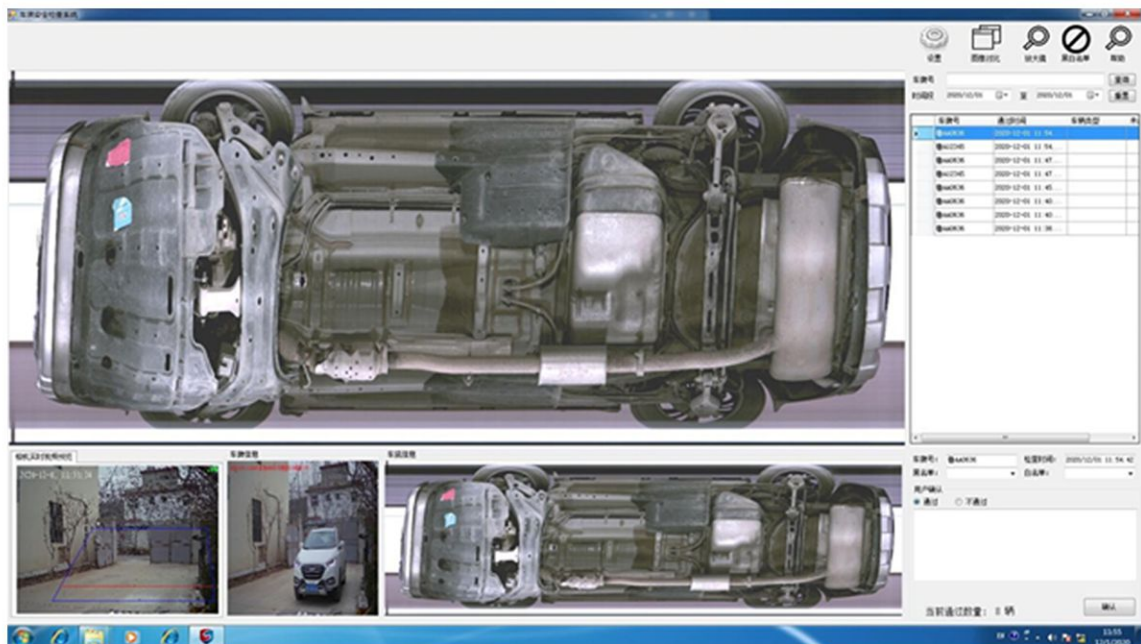


A DISTRIBUTED SYSTEM ARCHITECTURE PROVIDES ADDITIONAL BENEFITS:

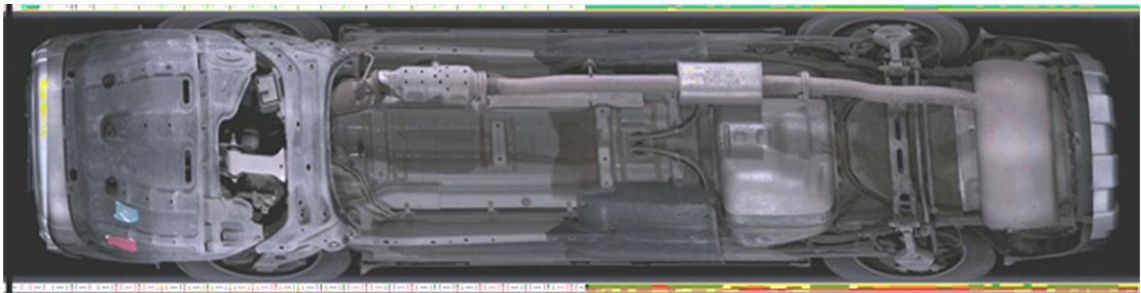
- ABILITY TO MANAGE THE DATA OF ANY UVSS CONTROLLER OR VIDEO SERVER FROM ANY WORKSTATION OF THE SECURITY SYSTEM.
- EXTENDED FUNCTIONALITY IN COMBINATION WITH OTHER SOFTWARE MODULES: FACIAL RECOGNITION , ACCESS CONTROL AND FIRE ALARM , 2D AND 3D MAPS, SITUATIONAL AWARENESS ANALYTICS , AND MORE.

08 System characteristics

Software interface:



HD Imaging:

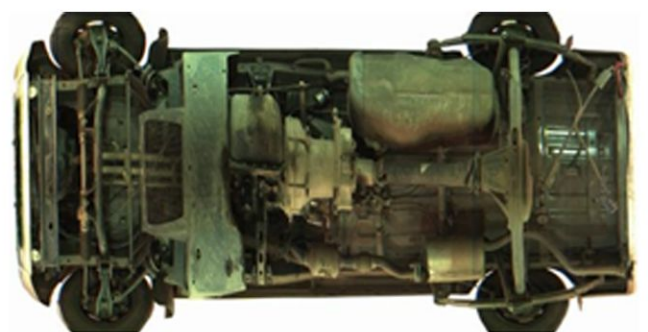


THE QUALITY OF THE PICTURE IS GOOD, THE ANGLE OF VIEW IS LARGE

- THE GENERAL RESOLUTION OF THE BOTTOM IMAGE CAN REACH 20 MILLION PIXELS, WHICH MEETS THE A REQUIREMENTS, AND THE SUBJECTIVE EVALUATION OF THE IMAGE MEETS THE GB/T 7401-1987 REQUIREMENTS;
- GRAYSCALE OF BOTTOM IMAGE CAN REACH UP TO 13 LEVELS, AND THE DETERMINATION OF GRAY LEVEL OF IMAGE MEETS THE REQUIREMENTS OF GB/T 6996-2012;
- INDEPENDENT DEVELOPMENT OF LINEAR ARRAY INDUSTRIAL CAMERAS

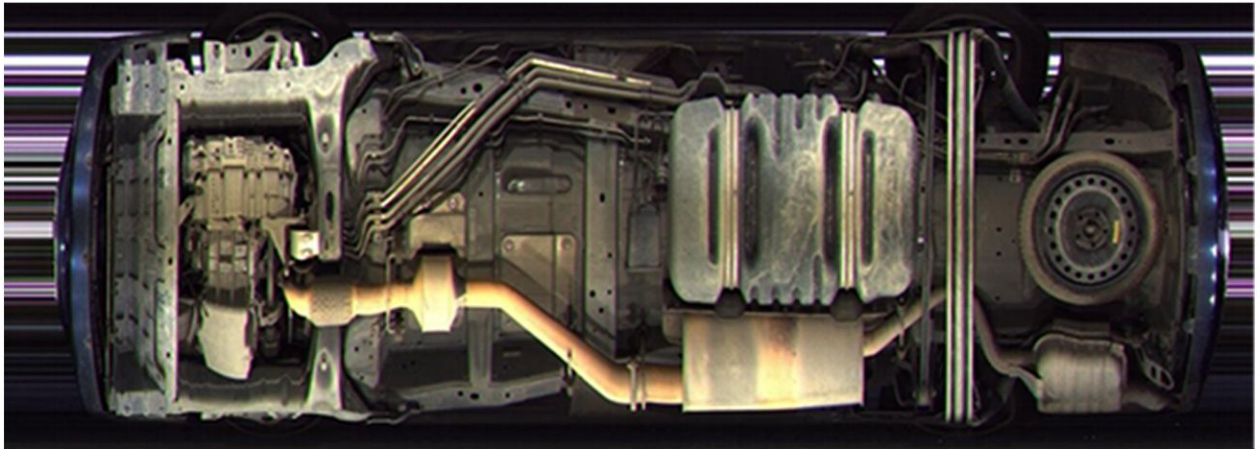


EFFECT OF ▲ IMAGE ON THE BOTTOM OF VEHICLE DETECTION SYSTEM

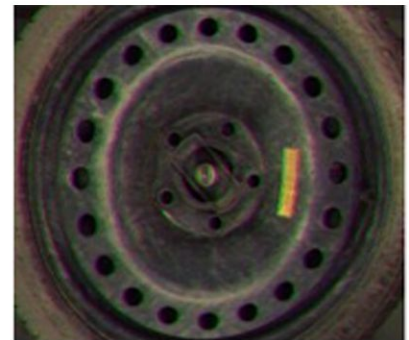
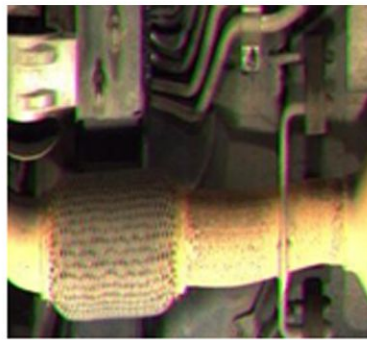


EFFECT OF ▲ IMAGE OF CAR BOTTOM DETECTING EQUIPMENT

- FIELD OF VIEW ANGLE UP TO 180°, CAN BE FULLY COLLECTED TIRE CONTOUR EDGE, SO THAT NO DEAD ANGLE IMAGING;
- USING TEN MILLION PIXEL INDUSTRIAL LENS, IMAGING DISTORTION IS SMALL, COLOR REDUCTION IS GOOD, DISTORTION IS LOW, HIGH DEFINITION.



▲ FULL PRESENTATION OF ▲ BOTTOM IMAGE - NO DEAD ANGLE



▲ IMAGE AMPLIFICATION OF CAR BOTTOM

THE CAR CAN BE STORED AND TRACED BACK

- DO NOT STOP DETECTION, IMAGING DRAWING TIME ≤ 1 SECOND;
- IMAGES CAN BE STORED TRACEABILITY, STORAGE LOAD TIME ≤ 1 SECOND.

SUITABLE FOR WIDE SPEED, ACCURATE SPEED MEASUREMENT

- SUITABLE SPEED ≤ 30 KM/H, UP TO 80 KM/H;
- DIFFERENT SPEED AND SPEED THROUGH THE CASE, THE DETECTION OF NO PRESSURE;
- SUPPORTS THE PASSING VEHICLE TO CARRY ON THE SPEED MEASUREMENT, THE SPEED MEASUREMENT RESULT ERROR IS WITHIN $\pm 10\%$.

EXCELLENT PROTECTION, HIGH SAFETY GRADE

- PROTECTION GRADE IS IP68, CAN ADAPT TO LONG TIME COMPLEX AND CHANGEABLE OUTDOOR WORKING ENVIRONMENT;
- MULTIPLE SEALING DESIGN: WATERPROOF, DUSTPROOF, MOISTURE-PROOF, FROST-PROOF, ANTI-FOG, ANTI-ROLLING;
- GOOD LOAD-BEARING HARDWARE DESIGN, CAN BEAR 50 TONS.

SUPPORTING PROFESSIONAL SOFTWARE, FULL SUPPORT FUNCTION

- THE SYSTEM WITH LICENSE PLATE RECOGNITION FUNCTION SUPPORTS THE LICENSE PLATE INFORMATION TO ASSOCIATE THE BOTTOM PICTURE;
- SUPPORT TO THE DATE, TIME AND OTHER INFORMATION TO QUICKLY RETRIEVE THE VEHICLE BOTTOM, LICENSE PLATE AND VEHICLE APPEARANCE IMAGE;
- IT SUPPORTS SHARPENING, WHITE BALANCE OR ADJUSTING CONTRAST AND SATURATION TO OBTAIN THE BEST IMAGE QUALITY.

SUPPORT PLATFORM DOCKING TO REALIZE MONITORING INTEGRATION

- CAN BE DOCKED WITH THE SECURITY PLATFORM TO ACHIEVE MONITORING INTEGRATION;
- EXTERNAL SUPPORT SDK DEVELOPMENT AND ACCESS TO THIRD-PARTY PLATFORMS.

OTHER FUNCTIONAL FEATURES

- CAR BOTTOM IMAGE ACQUISITION MODULE WITH TEMPERATURE AND HUMIDITY SENSOR, AND CAN DETECT TEMPERATURE AND HUMIDITY AND DISPLAY;
- EQUIPMENT CONTROL BOX: SUPPORT SYSTEM I/O CONTROL, INTERACTIVE INTELLIGENT CONTROL;
- WITH NETWORK CLUSTER FUNCTION, MULTIPLE DEVICES CAN SHARE PICTURES.

09 Product technical parameters

Technical parameters of vehicle bottom detection system

- 1) USING COLOR LINEAR ARRAY INDUSTRIAL CAMERA SCANNING TECHNOLOGY DYNAMIC IMAGING;
- 2) CHASSIS IMAGING DISPLAY TIME : $\leq 1\text{S}$;
- 3) CHASSIS STORAGE OR LOADING TIME : $\leq 1\text{S}$;
- 4) VEHICLE CHASSIS HEIGHT DETECTED : $\geq 40\text{ MM}$;
- 5) MEASURING CHASSIS WIDTH : $\leq 4500\text{ MM}$;
- 6) TEMPERATURE ADAPTATION : $-40^{\circ}\sim +85^{\circ}$;
- 7) FIELD OF VIEW : 180° ;
- 8) MOISTURE ADAPTATION : $< 90\%\text{RH}$
- 9) SPEED DETECTION: RECOMMENDED $\leq 30\text{ KM/H}$, UP TO 80 KM/H
- 10) WHEN THE VEHICLE PASSES AT A SPEED OF 80 KM/H , THE SYSTEM UNDERBODY IMAGE ACQUISITION COMPONENT SHOULD BE ABLE TO AUTOMATICALLY SCAN AND DISPLAY A CLEAR AND COMPLETE VEHICLE CHASSIS IMAGE FOR 1S ;
- 11) THE SHELL OF THE SYSTEM SCANNING DEVICE IS 304 STAINLESS STEEL.
- 12) BOTTOM IMAGE RESOLUTION: UNIVERSAL RESOLUTION 90 MILLION PIXELS ($7500*12000$)
- 13) BOTTOM IMAGE GRAYSCALE: MAXIMUM SUPPORT LEVEL 13;
- 14) PROTECTION LEVEL OF IMAGING EQUIPMENT AND STRUCTURAL COMPONENTS: IP68, ADAPT TO UNDERWATER 1.2 M FOR 48 HOURS;
- 15) THE MAIN BODY OF THE VEHICLE BOTTOM IMAGE SCANNING SYSTEM SUPPORTS PRESSURE WEIGHT : 50 TONS ;

- 16) CHASSIS IMAGING EQUIPMENT MULTI-SEAL DESIGN: WATERPROOF, DUSTPROOF, MOISTURE-PROOF, FROST-PROOF, ANTI-FOG, ANTI-ROLLING;
- 17) LIGHTING COMPONENTS : FOUR 80 W SINGLE SEALED LED SURFACE LIGHT SOURCE, LIFE ≥ 80000 H;
- 18) SUPPORT SYSTEM POWER SUPPLY: AC100V~ 240V;
- 19) CHASSIS IMAGE DATA TRANSMISSION DISTANCE : ≤ 100 METERS;
- 20) CAR BOTTOM IMAGE DISPLAY MODE: LARGE FACE TRANSVERSE COLOR DISPLAY;
- 21) BOTTOM IMAGE STORAGE FORMAT: STANDARD JPEG IMAGE FORMAT;
- 22) SCENE IMAGE DISPLAY RECORD : ≥ 1 (EXTENSIBLE MULTIPLEX);
- 23) LICENSE PLATE RECOGNITION SYSTEM, ITS LICENSE PLATE CAPTURE RATE : $\geq 99\%$, RECOGNITION RATE : $\geq 99\%$;
- 24) SUPPORT LICENSE PLATE INFORMATION ASSOCIATED WITH THE BOTTOM OF THE PICTURE;
- 25) THE SYSTEM SOFTWARE SUPPORTS SHARPENING, WHITE BALANCE OR ADJUSTING CONTRAST AND SATURATION TO OBTAIN THE BEST IMAGE QUALITY;
- 26) THE SYSTEM SUPPORTS THE RAPID RETRIEVAL OF THE VEHICLE BOTTOM, LICENSE PLATE AND VEHICLE APPEARANCE IMAGES ACCORDING TO THE DATE, TIME, CAPTURE EQUIPMENT, LICENSE PLATE NUMBER AND OTHER INFORMATION;
- 27) THE SYSTEM SUPPORTS THE SPEED MEASUREMENT OF PASSING VEHICLES AND DISPLAYS THE NUMBER OF VEHICLES IN REAL TIME
- 28) SYSTEM SOFTWARE SUPPORT IMAGE SCALING FUNCTION, MAXIMUM MAGNIFICATION SUPPORT 18 LEVELS;
- 29) WHEN THE NUMBER OF LICENSE PLATE RECOGNITION IS INCORRECT OR UNRECOGNIZED, THE SYSTEM SUPPORTS MANUAL RECORDING OF PASSING VEHICLES;
- 30) THE SYSTEM SOFTWARE SUPPORTS REAL-TIME DISPLAY OF ACCESS CAMERA CONNECTION STATUS SUCH AS BOTTOM CAMERA, ENTRANCE CAMERA AND EXIT CAMERA;
- 31) THE SYSTEM SOFTWARE SUPPORTS THE SELECTION OF THE CURRENT CAPTURED BOTTOM IMAGE, THE SYSTEM DISPLAY PART WILL AUTOMATICALLY POP UP THE SAME LICENSE PLATE NUMBER HISTORY IMAGE AND THE CORRESPONDING VEHICLE INFORMATION;
- 32) THE SYSTEM SUPPORTS THE IDENTIFICATION OF "TRAFFIC" AND "IMPASSABLE" FOR PASSING VEHICLES, AND QUERIES THE RESULT OF DISCRIMINATION. IT SHOULD SUPPORT THE SELECTION OF REASONS FOR NO TRAFFIC AND THE DETAILED ORIGINAL INTENTION OF REMARKS, AND SUPPORT THE ONE-CLICK POP-UP OF VIDEO IMAGES TRAFFIC AREAS;
- 33) THE SYSTEM CAN STORE NO LESS THAN 50,000 IMAGES ON THE BOTTOM OF THE VEHICLE, AND CAN AUTOMATICALLY CYCLE OVER THE STORAGE WHEN THE STORAGE EXCEEDS;
- 34) EQUIPMENT CONTROL BOX: SUPPORT SYSTEM I/O CONTROL, INTERACTIVE INTELLIGENT CONTROL;
- 35) THE SYSTEM HAS BLACK LIST AND WHITE LIST SETTING FUNCTION
- 36) THE SYSTEM SHOULD SUPPORT THE BLOCKING OF SUSPICIOUS VEHICLES THROUGH LINKAGE LIFTING COLUMNS AND FLIP-FLOP ROADBLOCKS, AND SUPPORT ONE-CLICK POP-UP OF TRAFFIC AREA IMAGES.
- 37) DRIVER IMAGE RECOGNITION SYSTEM: DRIVER IMAGE CAPTURE RATE: $>99\%$, RECOGNITION RATE: $>99\%$.

TECHNICAL PARAMETERS OF IPC PRODUCTS

Chassis:	ARC-3600;
Power :	250 WATX (AC100~240 V adaptive)
Main board:	EMB-H81
CPU :	Intel I5-4570, main frequency 3.2 GHZ ,4 core 4 threads;
Memory :	8 GB DDR3L Industrial memory
Hard disk:	1TB HDD
Serial:	RS232*2
Net port :	2*10/100/1000 M adaptive net port,1*10/100 net port
USB:	6*USB Port
Display:	VGA&HDMI
OS:	WIN7 64BIT professional authentic edition
Certification:	CE&FCC

TECHNICAL PARAMETERS OF LICENSE PLATE RECOGNITION CAMERA

- MAXIMUM RESOLUTION 1920*1080, STANDARD 1 ROAD LICENSE PLATE RECOGNITION MODULE, OPTIONAL EXTENSION TO 2 OR MULTIPLE;
- SINGLE CHARACTER RECOGNITION ACCURACY :≥99%;
- AVERAGE RECOGNITION TIME :<20 MS;
- RECOGNITION ACCURACY :≥99%
- LICENSE PLATE IMAGE ALLOWS HORIZONTAL TILT ANGLE :-10°~+10°; 6.
- RECOGNITION ACCURACY OF CHARACTERS (EXCEPT CHINESE CHARACTERS): ≥ 99%
- VIDEO SIGNAL-TO-NOISE RATIO: > 48DB

10 Product Picture

