

HOURSIS Server

Traffic Control Server



- CPU Processor: 2 quad-core industrial CPUs
- Clock: Supports high-accuracy industrial calibration
- Driver Board: 12 individual two-wire Ethernet I/Os, 24V DC output, 240V AC output
- Network Connection: 4 1000Mbps fibers, 8 RJ45s. 12 two-wire ethernets
- Serial Port: 8 RS-485s
- Multiple Outdoor Cabinet Available

» Overview

HOURSIS server is an up-to-date product by introducing the proven Industrial Internet techniques. It intensively integrates traffic control, traffic detection, traffic image process, traffic cloud data process and etc. in the way of network + computation mode with the built-in control strategies. It can be adapted to the complex traffic management and control sites and compliant with NTCIP protocols.

» Technical Specification

AI

- ▼ Localized self-adaptive traffic management center on jamming point, based on network model computing, can judge the traffic situation automatically
- ▼ Open architecture enables blending of multiple compute models and integrated management of multiple traffic patterns of urban group
- ▼ Perfect closed-loop of traffic optimization strategy implementation through machine learning
- ▼ Future-proof V2X & autonomous driving technologies

Edge Computing

Supplies rich computing ability, supports secondary customization and development
Applied with real-time operating system, being able to handle concurrent processing for multi tasks

Coexistence of multiple business

Being able to handle concurrent tasks including traffic control, video processing, violation monitoring, data retrieval

Data Storage

Build-in SSD
May be expanded up to 2TB

Controlling Methods

Acutated Control
Planned Acutated Control
Cableless Link (CLF)
Centralized Control
Local Optimized Control
Pedestrian Control
Manual Control
Emergency Call Control
Priority Control

Detector Connection

Standard IO ports
Serial ports
Wired and wireless networks

Timing Plan Support

Up to 128 timing plans may be stored
Up to 32 steps for each plans
Customizable lamp sequences
May control multiple intersections with one machine

Schedule Support

Up to 16 date-time schedule
Up to 16 64 events plans

Clock Calibration

GPS or high-accuracy center clock calibration

Equipments Driver

Support more than 32 phases drivers
Support more than 64 detectors input

» Product specifications

Technical Standards

GB25280
GB/T20999-2007
NTCIP

Safety Protection

Individual amber flashing
Individual conflict detection
Double power supply

Ports Standards

Two-wired ethernet ports	2ESDV-08P
24V DC	2ESDV-08P
220V AC	2ESDV-08P
RS485	2ESDV-08P
IO inputs	2ESDV-08P
1000Mbps ethernet ports	10/100/1000Base-T(X)
100Mbps ethernet ports	10/100bpsRJ45

Lights Legends

Front side	Running: RUN
	Power:PWR
	24V DC:24VDC OUT1/OUT2
	220V AC: 220AC OUT1/OUT2
	Phase **: P**
	Detector **: D**

Power

220V AC

Structure

Casement	Metal
Cooling	Passive Radiating
Installation	Standard 19" outdoor cabinet

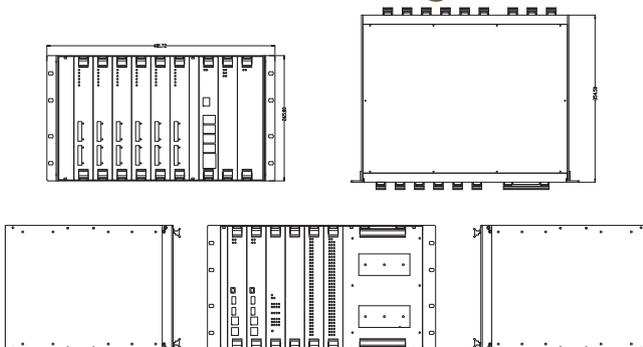
Working Environment

Working Temperature	-20 ~ +65 °C
Storage Temperature	-40 ~ +105 °C

Warranty

Warranty	3 years
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» Mechanical Drawing



CPU

CPU module

▼ The board adopts high-performance system chip as the processor, equipped with 8 RS485 serial port extensions, two USB interfaces, and extended 4 standard SATA interfaces to realize data access RS232 interface, providing external management serial port and management network port. Real-time data receiving and analysis, real-time computing, data exchange with network communication modules, storage backup of specified data, and management of each module in the device. The board is equipped with a clock reset and on-board power module. The system reset and control circuit with CPLD as the core can realize the reset of each module and chip in the system, and provide reference clock for each function module in the motherboard to realize 12V power supply to the motherboard. The conversion of the power required by the chip can also realize the system status monitoring, power status monitoring and other functions.



SWB

Switch module

▼ The board consists of core switching circuit and network port expansion circuit, clock reset and on-board power module, CPLD signal processing and LED serial-to-parallel conversion circuit and GPS receiver circuit. Provides 4 upstream Gigabit Ethernet interfaces and provides 4 Gigabit Ethernet interfaces reserved for data exchange between modules of the system, including data exchange of lamp group drive, video information, traffic detection data, etc. . The built-in clock reset circuit of the board can realize the reset of each module and chip in the system, and can provide reference clock for each function module in the motherboard. The board can realize the real-time processing of the internal spurious signals of the module, and configure the status indicators of each communication interface. The GPS receiving circuit can provide accurate time signals and PPS signals.



SBU

Data storage module

▼ The board is mainly composed of 5 SATA hard disk interface 5V level conversion circuit, providing 4 standard 2.5-inch SATA hard disk data interfaces, and providing 5V and 12V power for each hard disk; the data storage module is a standard CPCI board. The size is 233.35mm * 160mm * 2mm.



MSP

Motherboard status indication module

▼ The board consists of CPLD circuit, 3.3V power conversion circuit, LED and drive circuit; realizes LINL/ACT network status indication of 12 service ports, 4 uplink network ports and 4 extended network ports.



DCU

Detector interface module

▼ The board consists of a power conversion and protection circuit, an RS485 communication circuit, a data processing controller circuit, and an input detection circuit. It provides 3 independent RS485 interfaces, 2 5V power interfaces and 32 IO input interfaces, which can realize external RS485 communication and power supply support. It can realize real-time detection of external device IO status and support external IO communication of traffic monitoring and detection equipment.



DDU

Device driver unit

▼ The board consists of a power conversion and protection circuit, a data processing controller circuit, an external output control circuit, and a power carrier communication circuit. The module mainly provides power and data communication drivers for peripheral devices such as signal lights, and is equipped with dual-channel, independent two-wire communication. Interface, RS485 communication interface and strong and weak power supply, can be compatible with and drive the peripheral signal control equipment of the actual traffic intersection, and provide the board running status indication and strong and weak electric output status indication function.



MPU

Main power module

▼ The board is mainly composed of power conversion and protection circuits. It can provide 12V, 5V, 3.3V and other voltage outputs, and has built-in power supply filter circuit and output protection circuit to achieve the reliability and stability of weak current output.



PSP

Phase status indication module

▼ The board consists of a power conversion and protection circuit, an RS485 communication circuit, a data processing controller circuit, and an LED driver and display circuit. Data communication with the main CPU module can be realized, real-time display of the peripheral phase state of the system can be realized, and up to 32 phase indication functions can be supported.



PDU

Phase drive unit

▼ The board is mainly composed of a power conversion and protection circuit, a two-wire network communication circuit, a phase drive circuit and a data processing controller circuit. It can realize data communication with DDU module, complete real-time control and detection of 3 signal status, built-in dual ID encoder circuit, and realize 99 kinds of device address coding.



DSP

Detector status indication module

▼ The board consists of a power conversion and protection circuit, an RS485 communication circuit, a data processing controller circuit, and an LED driver and display circuit. Data communication with the main CPU module can be realized, real-time display of the status of the system peripheral vehicle detector, non-motor vehicle detector, video detector, etc., and up to 32 detection status indication functions can be supported.



PHD

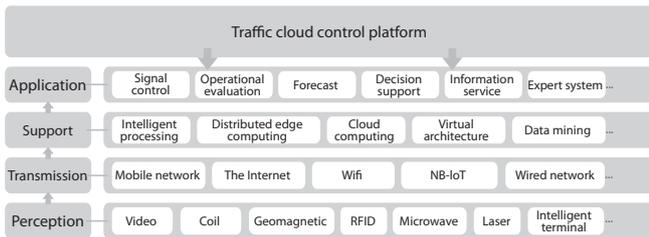
Signal driving module

▼ The signal driving module is composed of a power conversion circuit, an MCU controller, an RS485 communication circuit, an 18-way two-way thyristor switch circuit, a current detecting circuit and other protection circuits. The signal board communicates with the main control board in real time, and the lamp group output is driven according to the instruction of the main control board, and the output state is returned to the main controller. Each signal lamp drives 6 sets of traffic lights. Each set of signal lights contains three outputs of red, yellow and green. The rated voltage is 220VAC and the maximum current is 5A. The server can accommodate up to 6 signal light drive modules.

Smart Traffic Management Platform – HOURSIS Center

》》 Traffic Management Cloud Platform

HOURSIS Center is a comprehensive control and control service system based on traffic control server, traffic control and traffic information service. It uses traffic information collection, processing, distribution, exchange, analysis and mining as the main line for traffic participation. Provide a variety of services to improve overall traffic efficiency, improve travel comfort and reduce environmental pollution.



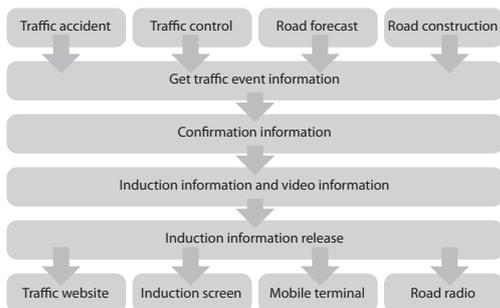
System Features

- ▶ Diversified information collection
- ▶ Information service humanization
- ▶ Intelligent signal control
- ▶ Strict inspection
- ▶ Scientific decision-making

》》 Functional Modules

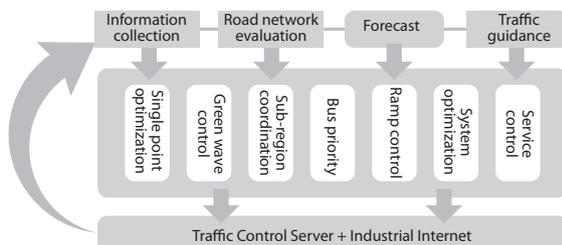
Traffic information service

Based on real-time data collection and statistical analysis of historical data, it provides customized traffic information for traffic participants, including: dynamic traffic guidance, static traffic guidance, multi-channel information interaction (WeChat, Weibo, Internet platform, etc.).



Traffic Signal Control

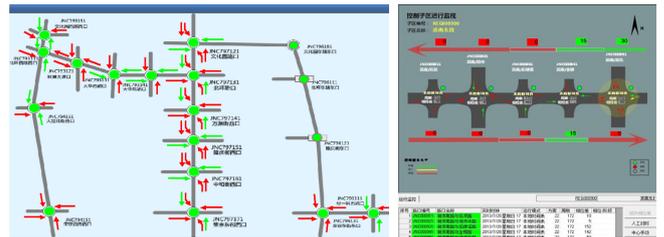
Facing the multi-modal urban road network, according to the real-time perceived passenger flow and traffic flow change, combined with the change of time and regional traffic demand, it provides a variety of real-time and efficient signal control integrated solutions for the road network.



Traffic situation monitoring

Real-time monitoring of various types of equipment, facility status and traffic operation status related to urban traffic using industrial Internet technology, traffic flow operation evolution for traffic control and major traffic control measures for major activities

Trend discrimination, to achieve reasonable command and dispatch of police resources.



Security check and control

Combine the electronic police, bayonet and RFID data, use the edge computing power of the traffic control server, set up a high-performance cloth control network, and provide real-time vehicle supervision means for the public security traffic control department to rectify and investigate vehicles and various crimes.



Auxiliary decision support

Based on various traffic perception data of urban road network, using traffic control server edge calculation, distributed data processing capability, data analysis, mining, intelligent learning, providing scientific and data support system for traffic management services.

