

CMMOP

Integrated Operations and Maintenance (O&M) Solution for Video Application System

Version 3.0

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China's Leading Comprehensive Operations & Maintenance Solution Provider



CMMOP[®]

Significantly Enhancing the Health Level of Video Surveillance Systems



The CMMOP O&M Solution is designed for government agencies and organizations with large-scale video application systems. It assists management personnel in asset management, issue detection, fault diagnosis, intelligent analysis, and efficient management. The solution integrates asset management, problem awareness, and fault recovery management. Centered on assets and driven by work order management as a key process, it establishes an asset health O&M model. By utilizing visualization, highly automated asset collection, and issue detection algorithms, it empowers administrators, users and O&M personnel to improve efficiency by reducing the need for labor-intensive, inefficient manual checks, issue discovery, and problem resolution. This ultimately enhances the overall asset health, ensuring high online rates, high utilization, and high reliability.

Operations and Maintenance System



Perception Analysis

- | | |
|---------------------------|--------------------------|
| Power Outage | DC Power Anomaly |
| Soft Fault | Host Network Cable |
| Video Occlusion | Disconnected |
| Network Anomaly | Device Freeze |
| Surge Protector | Hardware Failure |
| Failure | Forced Enclosure Opening |
| Fiber Link Fault | Core Node IP |
| Door Opening | Misconfiguration |
| Temperature Early Warning | Host LAN Fault |



Function Applications

- | | |
|----------------------------|-----------------------------|
| Current/Voltage Monitoring | Intelligent Fault Diagnosis |
| Video Quality Diagnosis | Performance Evaluation |
| Asset Distribution | Mobile APP |
| Remote Control | Recording Integrity |
| GNSS Positioning | Diagnosis |
| Work Order Management | Asset Management |
| | Engineering Management |

Application System



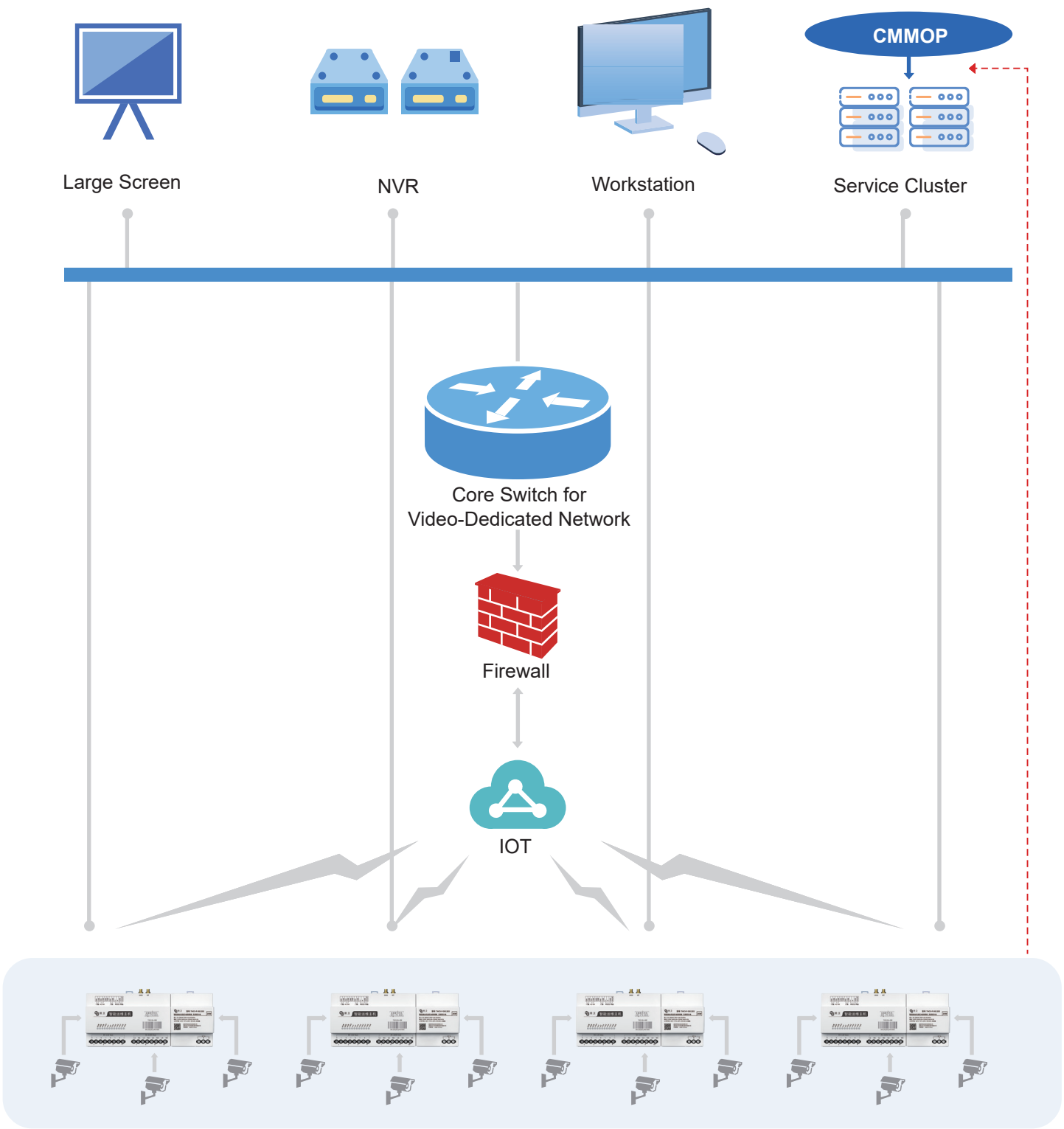
Generate

- | | |
|-----------------|--------------|
| Device Offline | Video Lag |
| Blurred Image | Black Screen |
| Video Occlusion | |

Business Applications

- | | |
|---------------------|---------------------------|
| Real-Time Recording | Video Management |
| Video Playback | Access Control System |
| Intrusion Detection | Facial Recognition |
| Video Management | Vehicle Management |
| Illegal Parking | Passenger Flow Statistics |
| Vehicle Capture | |

Deployment Architecture



1

Employ CMDB asset management to help owners manage assets, locations, user configuration methods, and costs across multiple dimensions such as time, space, and content.

2

Use the strong networking capabilities of IoT with multi-dimensional sensing modules to accurately reflect asset health in real time, reducing the influence of subjective human judgment on fault diagnosis.

3

Perform intelligent diagnostics on all nodes and end devices in real time, triggering immediate alerts upon detecting abnormalities. Greatly reduce the occurrence of system failures and shorten the time required for fault detection and resolution.

4

Adopt a well-established work order management process: problem identification — work order assignment — work order processing/feedback — work order review, forming a closed-loop process.

5

Enable two-way data interaction between PC and mobile app to improve the efficiency of problem identification, diagnosis, and resolution.

Solution Features

Solution Composition



"Defense Vanguard"
Intelligent O&M Host



"CMMOP"
Intelligent O&M Management
Platform



"Sentinel"
Intelligent O&M Mobile App

Defense · Vanguard Intelligent O&M Host

The Defense · Vanguard O&M host adopts an integrated design, incorporating AC power interfaces, DC power interfaces, network transmission interfaces, and sensor interfaces. It supports functions such as mains power failure detection, network transmission monitoring, device power consumption monitoring, temperature-controlled fans, remote control, temperature monitoring, and anti-theft monitoring. It can precisely diagnose various faults including mains power failure, DC power failure, optical fiber failure, camera power supply failure, camera network cable failure, and device failure. This effectively addresses issues such as delayed detection and handling of front-end equipment failures. It improves maintenance efficiency, reduces overall maintenance costs, and contributes to systematic and standardized management of maintenance operations. The product is available in three series: "Simplified Edition", "Standard Edition", and "Traffic Edition", each designed for different application fields based on interface and functional requirements.

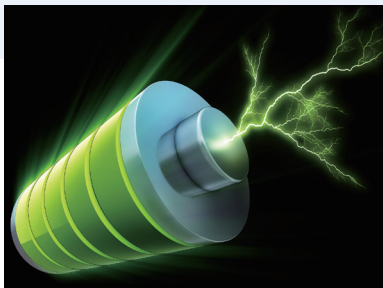
Intelligent O&M Host Features



Real-time autonomous device inspection for precise localization of fault nodes



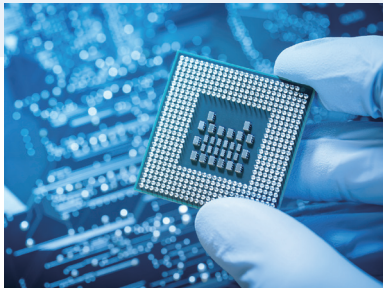
Dual-network active-active ensures 7×24×365 reliable monitoring



Industrial-grade energy metering accuracy (up to Class 1.0) for precise measurement of front-end equipment energy consumption



Remote device reboot for quick resolution of soft faults



GNSS positioning chip
Accurate asset location



Electronically controlled enclosure lock supports QR code unlocking and remote unlocking

Defense · Vanguard Intelligent O&M Host

Simplified Edition



Usage Environment

Small and medium-sized projects such as intelligent residential communities, integrated monitoring systems, intelligent security video surveillance, and monitoring systems

Application Scope

Ambient temperature: -30℃ to +65℃; Relative humidity: ≤95%; Atmospheric pressure: 70–106 kPa; Storage temperature: -45℃ to +55℃

Product Parameters

Model		Defense · Vanguard Intelligent O&M Host — Simplified Edition
IoT	-	4G Module
GNSS	-	/
Channel/Protection Current	DC	Fixed 12V/1A × 1; 9~36V/3A × 2
	AC	220V/3A
Total Load Power	-	63-228W/660W
Interfaces	Communication interface	1 × RJ45 10/100M adaptive Ethernet port; 1 × RS485 interface
	Output interface	1 × 12V/1.5A cooling fan output
	Input interface	1 × door magnetic input
General Specifications	Operating Temperature & Humidity	-40 to 85°C, humidity < 95% (non-condensing)
	Power Supply	DC12V
	Operating Power	1.2W
	Dimensions (mm)	100mm x 90mm x 65mm

Functional Modules	GNSS Positioning	○
	Reverse Connection Protection for DC Input	●
	Remote Restart	●
	Light Sensing Monitoring	/
	Vibration Detection	/
	Electrical Anomaly Alarm	●
	Surge Protector Failure Monitoring	/
	Temperature & Humidity Monitoring	●
	QR Code / Remote Door Unlocking	/

The above parameters are for reference only. Actual product may vary.

● Standard ○ Optional / Not supported

Defense · Vanguard Intelligent O&M Host

Standard Edition



Usage Environment

Application Scope

Large-scale engineering projects such as intelligent buildings, smart residential communities, integrated monitoring systems, intelligent security video surveillance, Safe City monitoring, and Sharp Eyes projects.

Ambient temperature: -30 ℃ to +65 ℃ ; Relative humidity: ≤95%; Atmospheric pressure: 70–106 kPa; Storage temperature: -45 ℃ to +55 ℃

Product Parameters

Model		Defense · Vanguard Intelligent O&M Host — Standard Edition
IoT	-	4G Module
GNSS	-	Beidou / GPS
Channel/Protection Current	DC	12V/2A × 4
	AC	220V/3A × 4
Total Load Power	-	60W/2200W
Interfaces	Communication interface	1 × RJ45 10/100M adaptive Ethernet port; 1 × RS485 interface; 1 × RS232 interface
	Output interface	1 × 12V/1.5A cooling fan output; 1 × door lock control output
	Input interface	1 × door magnetic input
General Specifications	Operating Temperature & Humidity	-40 to 85°C, humidity < 95% (non-condensing)
	Power Supply	DC 12V ±25% AND 220V (Dual-specification power supply included)
	Operating Power	1.2W
	Dimensions (mm)	216mm x 90mm x 65mm

Functional Modules	GNSS Positioning	●
	Reverse Connection Protection for DC Input	●
	Remote Restart	●
	Light Sensing Monitoring	/
	Vibration Detection	/
	Electrical Anomaly Alarm	●
	Surge Protector Failure Monitoring	○
	Temperature & Humidity Monitoring	●
	QR Code / Remote Door Unlocking	●

The above parameters are for reference only. Actual product may vary.

● Standard ○ Optional / Not supported

Defense · Vanguard Intelligent O&M Host

Traffic Edition



Usage Environment

Application Scope

Intelligent Transportation Systems (ITS), expressway video surveillance systems, and other diversified security equipment projects

Ambient temperature: -30℃ to +65℃; Relative humidity: ≤95%; Atmospheric pressure: 70–106 kPa; Storage temperature: -45℃ to +55℃

Product Parameters

Model		Defense · Vanguard Intelligent O&M Host - Traffic Edition
IoT	-	4G Module
GNSS	-	Beidou / GPS
Channel/Protection Current	DC	12V/2A × 4
	AC	220V/3A × 5; 24V/3A × 4
Total Load Power	-	96W/2200W
Interfaces	Communication interface	1 × RJ45 10/100M adaptive Ethernet port; 1 × RS485 interface; 1 × RS232 interface; 1 × CAN bus interface
	Output interface	1 × 12V/1.5A cooling fan output; 2 × DO outputs
	Input interface	1 × door magnetic input; 4 × dry contact inputs
General Specifications	Operating Temperature & Humidity	-40 to 85°C, humidity < 95% (non-condensing)
	Power Supply	DC12V
	Operating Power	1.2W
	Dimensions (mm)	250mm x 90mm x 65mm

Functional Modules	GNSS Positioning	●
	Reverse Connection Protection for DC Input	●
	Remote Restart	●
	Light Sensing Monitoring	●
	Vibration Detection	●
	Electrical Anomaly Alarm	●
	Surge Protector Failure Monitoring	●
	Temperature & Humidity Monitoring	●
	QR Code / Remote Door Unlocking	○

The above parameters are for reference only. Actual product may vary.

● Standard ○ Optional

INTELLIGENT OPERATION AND MAINTENANCE MANAGEMENT PLATFORM

CMMOP Integrated O&M Management Platform



It establishes an asset inventory to manage monitoring points and other assets within the video-dedicated network effectively throughout their entire lifecycle in an archival manner. It collects, distributes, alerts, and synchronizes configuration data, performance data, and status data of various video resources within the video-dedicated network. The platform analyzes and presents the collected performance and status data through charts, ensuring streamlined maintenance management.

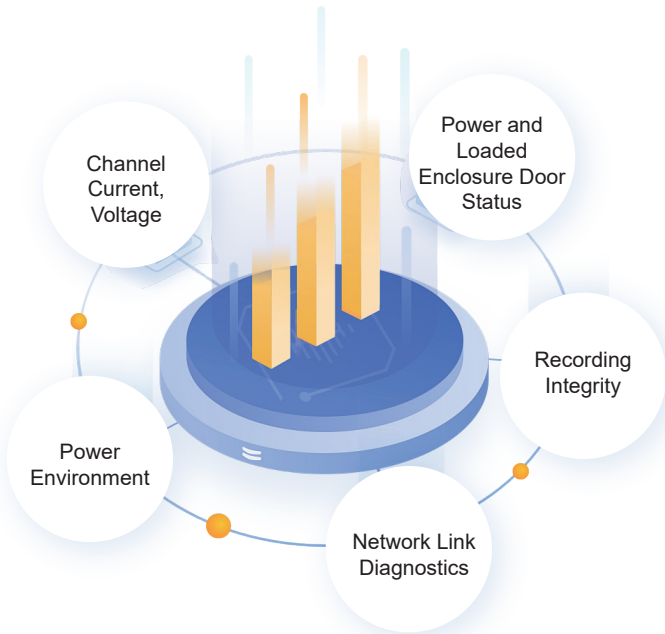
It quantifies key business concerns such as recording status, execution and workload of O&M work orders. This includes quantifying the online rate of front-end equipment, the workload of maintenance personnel, and the comprehensive availability rate of various devices. The platform comprehensively analyzes the operational status of all monitored objects from a macro perspective, evaluates trends in system operation and maintenance, and provides a basis for business system optimization and maintenance planning. It offers leadership effective tools for system upgrades, transformations, and expansions, and provides data support for evaluating the operation and maintenance services of construction or maintenance units by project owners.

Core Functions



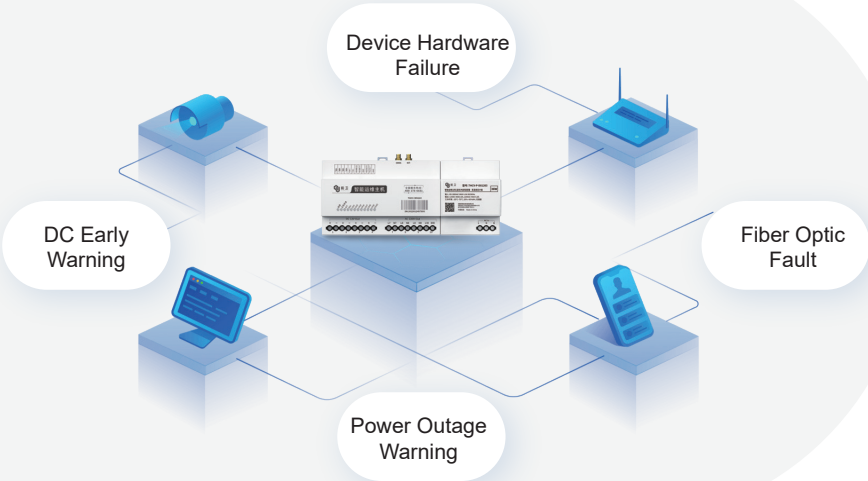
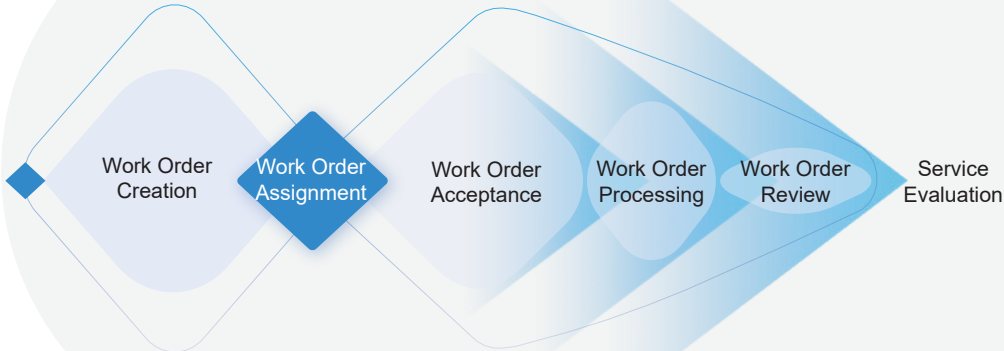
Multi-Dimensional Integrated Perception

Integrates perception across multiple dimensions, including power consumption monitoring, network links, traffic, service diagnostics, and physical environment, to analyze equipment working status in real time.



Efficient O&M Management Mechanism

Real-time fault feedback, automated/manual work order management, and streamlined maintenance processes.



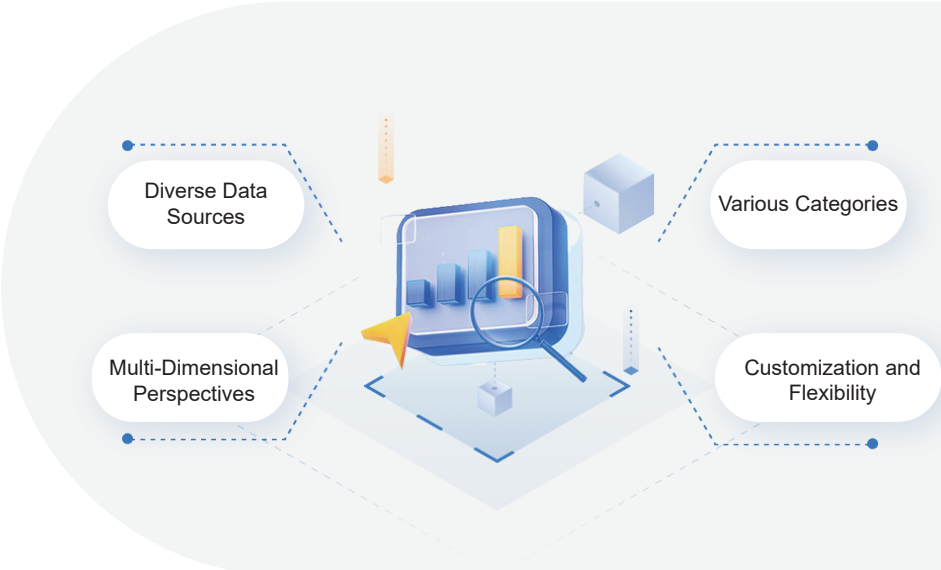
Intelligent Fault Early Warning

High-Speed Alerting and Diagnosis: Automatically generates issues and accurately analyzes root causes of equipment abnormalities.



Diversified Report Statistics

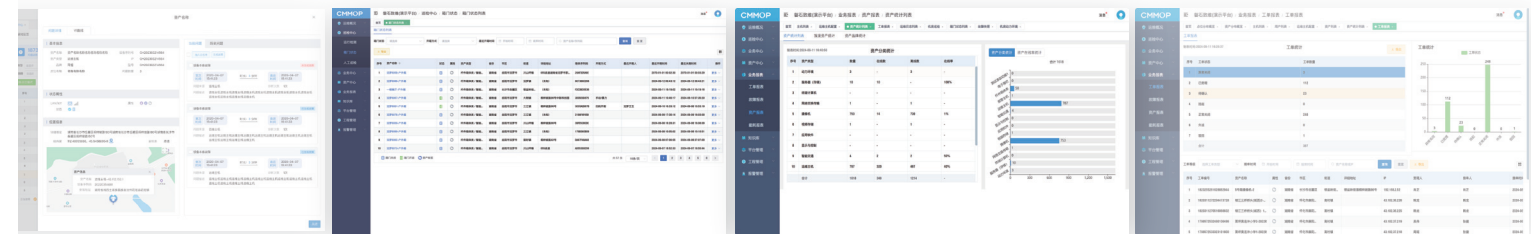
Online rate categorized statistics, multi-dimensional data analysis, work order summary reporting, data-based performance evaluation



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Platform Interface Display

The functional interface is an integral part of the platform, displaying resource distribution, personnel management, data analysis, and summary reports from multiple perspectives such as assets, business, management, and configuration. It helps users operate the platform quickly and efficiently, thereby improving work productivity.



[Network Configuration]

[Host Configuration]

[Basic Information]

[AC Channel]

[DC Channel]

INTELLIGENT OPERATION AND MAINTENANCE MOBILE TERMINAL

"Sentinel" Mobile App

The primary purpose is to enable the processing and circulation of work order operations via the App outside specific dedicated network environments. This includes accepting or rejecting work orders, providing feedback during processing, checking work order status (such as pending acceptance, pending processing, pending review, etc.), and receiving work order notifications. In addition to handling work order tasks, the system also supports functions such as fault point location and navigation, tracking of engineers' movement trajectories, and uploading manual inspection records.



Asset Operation Status

Checks/monitors asset status in real time; receives synchronized alerts for faults and issues, accessing the latest information anytime, anywhere; achieves remote management through visual operations.



Work Order Processing

The App synchronizes work order data with the PC terminal, enabling real-time updates of work order status, processing progress, and image feedback information.



Remote Device Startup

Remotely controls device reboots and power supply channels.



Asset Navigation

Integrates with Amap and Baidu Map, providing nationwide map browsing, asset distribution, and asset navigation services. Significantly reduces the time required for handovers between new and existing personnel, enhancing fault resolution efficiency.



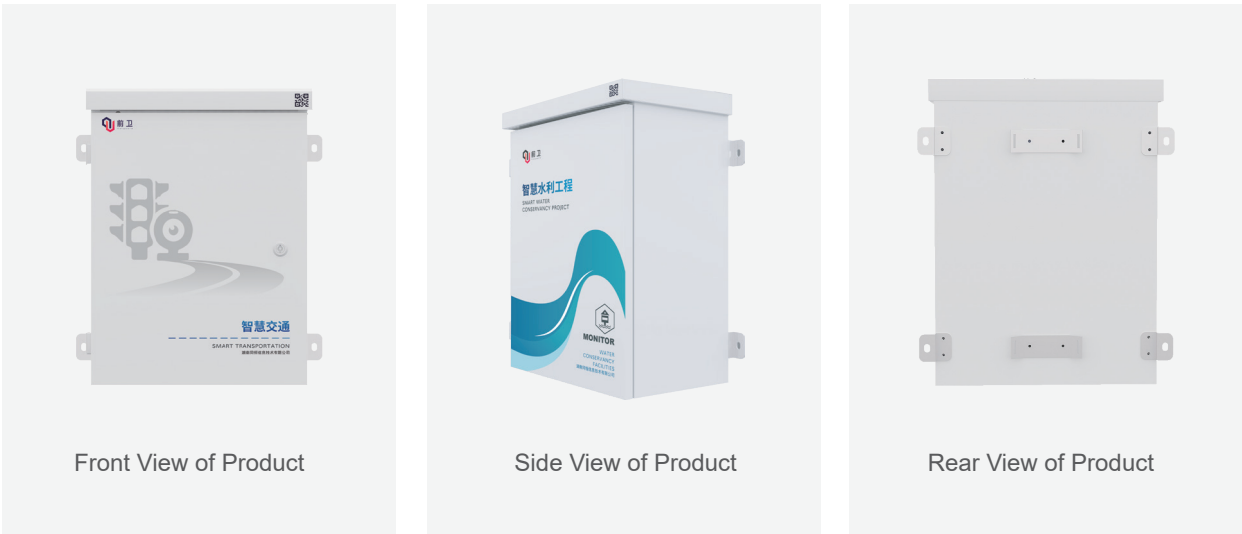
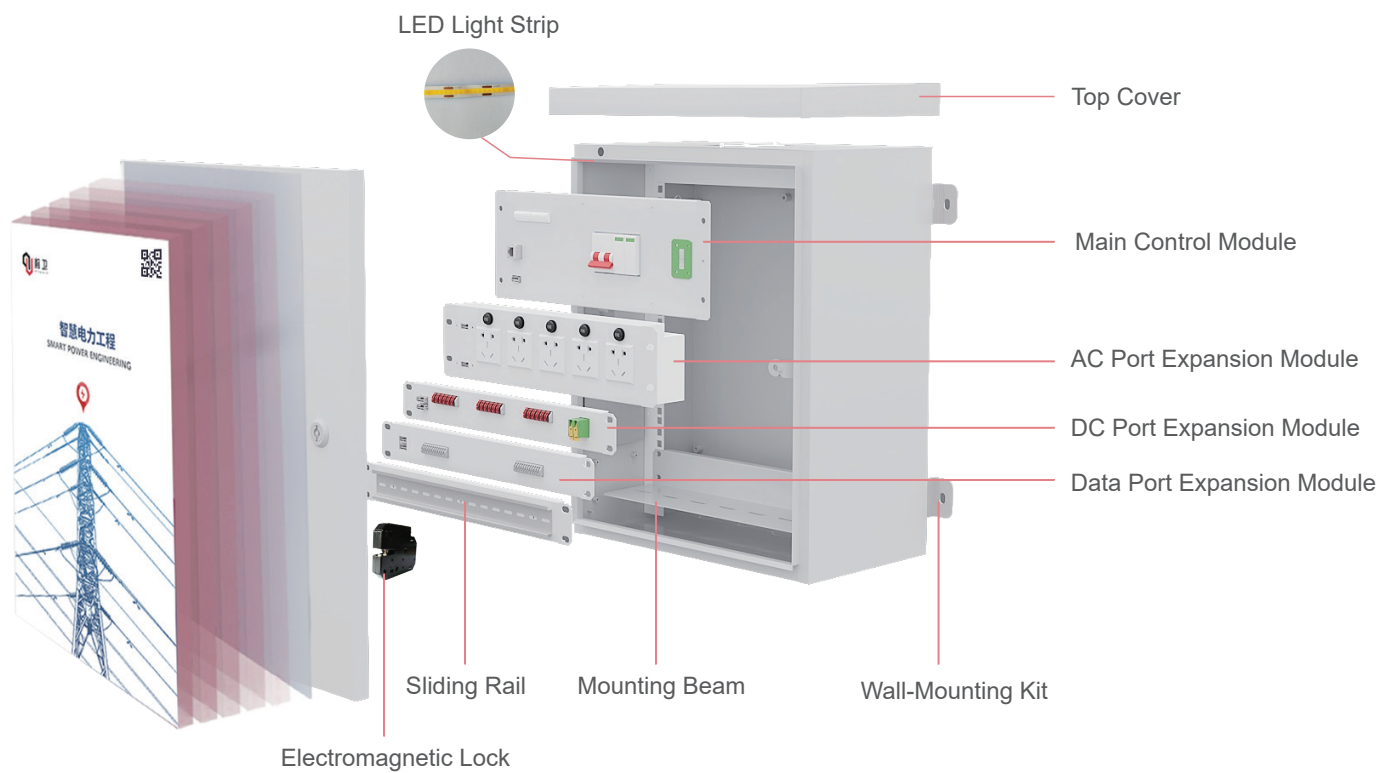
Intelligent Device Enclosure

The Defense Vanguard intelligent device enclosure series is dedicated to independent R&D and innovation, achieving fully self-developed and self-produced high-quality products with core competitiveness. By closely integrating front-end intelligent sensing devices with back-end operation platforms, it enables accurate health analysis, fault localization, and efficient business processing. It achieves proactive monitoring, real-time prediction, and post-event resolution, reducing overall maintenance costs and significantly enhancing the operational capabilities of video surveillance systems.

- "Concise" Series
- "Secure" Series
- "Peak" Series
- "Vast" Series



Enclosure Structure



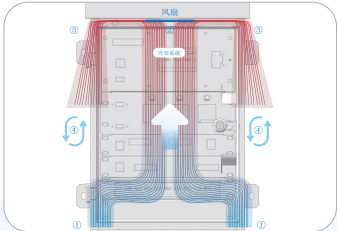
Ingenious Structural Design

Separation of high-power and low-power circuits to prevent interference and reduce safety risks caused by mixed wiring. External interfaces are user-accessible, while auxiliary lines are fully internalized to avoid misconnection. Power and communication interfaces feature "error-proofing" design, and modules adopt a reliable, easy-to-install "L"-shaped structure.



Independent Modular Architecture

Expansion modules are independently designed and customizable to meet personalized needs. Each expansion module has clearly defined functions and interfaces, and modules operate independently for easier disassembly and maintenance.



Efficient Heat Dissipation & Temperature Control

Turbocharged fan with horizontal airflow, utilizing aerodynamic and thermodynamic principles to optimize cooling performance.



45° Drainage Groove Design

The external classic 45° drainage groove ensures seamless compression between the enclosure and door with its on-site foamed pure polyester seal, leaving no gaps.



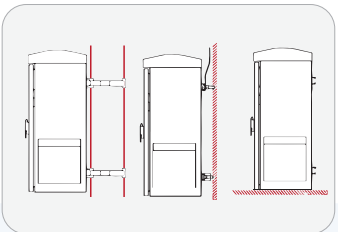
Waterproof, Snowproof, Lightning-Resistant, and Durable

Designed to withstand harsh outdoor conditions including sandstorms, thunderstorms, and salt spray. Built-in foam rubber waterproof gasket provides excellent sealing, corrosion resistance, and aging resilience.



Prevention of Moisture Accumulation

Utilizes air circulation to control humidity, preventing the retention of moist and hot air and the formation of condensation. The air duct design not only ensures efficient heat dissipation but also eliminates the issue of insects using the device enclosure as a shelter.



Adaptable to Various Installation Methods

Mature installation solutions ensure robust and secure mounting. Supports wall-mounting, pole-mounting, and ground installation. The enclosure offers a load-bearing capacity of 1000 kg.



Professional Industrial Coating Design

Customized designs tailored to customer requirements, application scenarios, value propositions, and functional needs.

Standard Accessories



Main Control Module



AC Port Expansion Module



DC Port Expansion Module



Electromagnetic Lock



2P Tool-Free PCB Terminal Block



10P Terminal Block



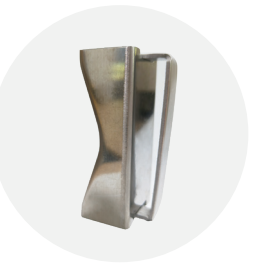
Stainless Steel Clamp



304 Quick-Release Stainless Steel Band



304 Quick-Release Stainless Steel Cable Tie



Stainless Steel Back Buckle

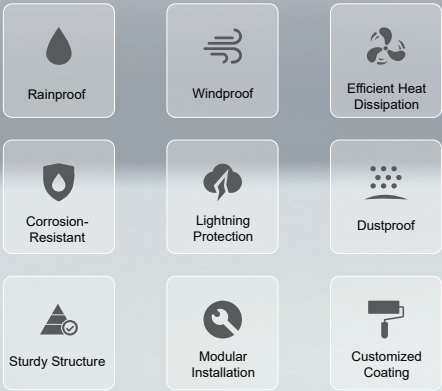
Exquisite Material Craftsmanship

The enclosure uses galvanized steel + spray coating + foam dispensing, providing waterproofing, dust resistance, rust prevention, and UV resistance without fading. The slanted top design effectively prevents accumulation of water and dust.



Intelligent Device Enclosure "Concise" Series

The "Concise" Series intelligent device enclosure is designed for outdoor use, featuring rainproof, dustproof, corrosion-resistant, and rust-resistant properties, along with intelligent control and high integration. The unit has a neat and aesthetic design, incorporating components such as a power surge protector, fan, fiber splicing tray, cable fixing base, and enclosure door lock. It is suitable for video surveillance applications including Sharp Eyes Project, Safe City, and Intelligent Transportation Systems.



Functional Features

Precise Fault Localization for Rapid Troubleshooting

Accurately distinguishes between mains power, network, and equipment failures, with detailed fault analysis. Supports detection of various anomalies including mains power abnormalities, overvoltage, fiber faults, temperature/humidity deviations, unauthorized door opening, and enclosure vibration.

Front-End Intelligent Management & Back-End Centralized Processing

Utilizes a multi-tier detection mechanism combining power supply monitoring, network diagnostics, and channel inspection at the front end, with back-end platform verification to ensure alarm accuracy. The back-end employs advanced algorithms for multi-dimensional data analysis to enhance alarm reliability.

Integrated Design with High Space Utilization

The integrated design minimizes internal space occupation, reserving over two-thirds of the area for customer equipment deployment. It offers high space utilization and exceptional practicality. The rational internal layout facilitates convenient installation and debugging, while separate routing for high-power and low-power circuits maintains a clean and aesthetic exterior.

Industrial-Grade Security and High-Reliability Design

Designed to operate within industrial temperature ranges and featuring professional outdoor lightning protection, the system includes power supply safeguards against short circuits, overloads, overvoltage, undervoltage, and leakage. Zero-interruption power supply technology ensures continuous power delivery to video surveillance cameras even during system reboots, maintaining uninterrupted video services throughout the restart process.

"Concise" Series - Product Parameters

Model	THCB-C		Brand	Defense · Vanguard	
Opening Method	Right-Hinged Door		Material	SGCC (Hot-Dip Galvanized Steel)	
Protection Rating	IP55		Color	<div><div>High-Gloss White</div><div>White Sand Texture</div><div>Light Gray</div><div>Silver</div><div>Light Green</div><div>Army Green</div></div>	
Power Input	AC220V		Cable Entry	Bottom Entry	
Operating Temperature	Ambient temperature: -30℃ ~ +65℃		Air Duct Type	Top Air Duct	
Operating Humidity	Relative Humidity: ≤ 95%, Atmospheric Pressure: 70 ~ 106Kpa, Storage Temperature: -45℃ ~ +55℃				
Standard Configuration (Model A)	Modules	THMC-XXLET1-1202: Main Control Module (LTE Cat1 Communication) THCE-DC012-03A-03S: 1× DC12V Input; 3× DC12V/3A Output Module THCE-AC220-05A-02S: 2× AC220V/5A Output Module			
	Accessories	Mechanical Lock, 4G Puck Antenna, Cooling Fan			
Expansion Ports	Supports 1/2/4/6/8 routing ports, 2/4/6/8 switching ports, controllable output ports including DC5V, DC9V, DC12V, DC36V, and AC220V, and is compatible with surge protection modules and communication modules.				
Features	<div>1. Material: The enclosure is constructed from high-quality 1.0mm thick cold-rolled steel plate with spray-coated surface finish, providing waterproof, dustproof, and corrosion-resistant properties.</div> <div>2. Configuration: Includes a 2P 32A isolation switch and a 40KA power surge protector.</div> <div>3. Features:<div>◇Mains power failure detection, temperature-controlled fan, remote control, network transmission monitoring, and internal cabinet temperature monitoring. Real-time interaction with monitoring centers via IoT or metropolitan area networks to proactively report issues such as network interruption, equipment damage, mains power failure, and excessive internal temperature.</div><div>◇Supports 2G/4G and other networks for IoT data transmission, with modes including wireless, wired, automatic wired/wireless switching, and wireless backup.</div><div>◇Intelligent early warning function: Video recording integrity check, optical fiber link fault detection, server abnormality detection, local hardware fault detection, and camera failure detection, etc.</div><div>◇Electrical health monitoring: Input voltage, output current, and load power monitoring with customizable thresholds on the platform; alerts for voltage, current, and power anomalies.</div><div>◇Temperature and humidity monitoring: Real-time internal temperature and humidity tracking with user-defined thresholds via the client interface; alerts for exceeding/falling below set values via the client interface, indicating excessively high or low temperature/humidity conditions.</div><div>◇Power outage monitoring: Built-in power monitoring module distinguishes between regional power failures (e.g., mains outage) and internal power failures (e.g., circuit breaker trip) without requiring backup power; alerts are uploaded to the client platform with dedicated outage status icons.</div><div>◇Network disconnection monitoring: Alerts will be shown on the platform when network connectivity is lost within the enclosure.</div><div>◇Remote control: Remote activation, deactivation, and reboot of load power supply to resolve front-end device freezes; remote activation/deactivation of voice alarms.</div><div>◇Uninterrupted load power supply: Continuous power delivery to the internal circuits even if the intelligent operation and maintenance terminal itself fails, provided that the external power supply is functioning normally, ensuring that all internally powered devices maintain uninterrupted operation.</div><div>◇Remote upgrade: Supports remoter system updates via the client platform.</div><div>◇APP integration: Bi-directional data synchronization between mobile app and client platform.</div><div>◇Includes 3-year warranty and IoT communication service fees.</div></div>				

	Model A		Model B
External Dimensions (W×H×D)	400 × 550 × 250	External Dimensions (W×H×D)	350 × 480 × 170
Internal Dimensions (W×H×D)	398 × 487 × 229	Internal Dimensions (W×H×D)	328 × 408 × 153
Weight (kg)	16KG	Weight (kg)	15KG

The above parameters are for reference only. Parameters for Model B are subject to the actual product. (Both Model A and Model B can be customized according to customer requirements)

Intelligent Device Enclosure

"Secure" Series

Designed for all-weather outdoor use in exposed environments, the "Secure" Series intelligent device enclosure offers rainproof, dustproof, aging-resistant, rust-resistant, and intelligently controlled features, along with quick installation capabilities. The interior includes a power surge protector, power distribution unit, fiber splicing tray, cooling fan, cable fixing base, and door lock. Internal components feature modular installation, allowing each unit to be replaced independently. It is suitable for video surveillance applications including Sharp Eyes Project, Safe City, and Intelligent Transportation Systems.



Lightning Protection



Corrosion-Resistant



Sturdy Structure



Modular Installation



Customized Coating



Wind and Rain Resistance



Efficient Heat Dissipation

Functional Features

Flexible Combination of Service Circuit Boards Customizable Configuration Based on Demand	A wide range of circuit boards is available including power supply boards, network surge protection modules, power surge protection modules, and data templates, which can be easily installed and tailored to different application scenarios, offering flexible configuration.
Intelligent Front-End Management and Control Centralized Back-End Processing	A multi-tier detection mechanism is employed at the front end, integrating power supply monitoring, network diagnostics, and channel inspection, with back-end platform verification to ensure alarm accuracy. The back-end employs advanced algorithms for multi-dimensional data analysis to enhance alarm reliability.
Accurate Fault Localization Rapid Troubleshooting	The system accurately distinguishes between mains power and network device failures, with a refined judgment of fault symptoms. It supports detection of various faults including abnormal mains power, overvoltage, fiber failure, abnormal network traffic, temperature/humidity deviations, unauthorized door opening, and enclosure vibration.
Industrial-Grade Safety Protection High-Reliability Design	It supports industrial temperature ranges and professional outdoor lightning protection. The power system includes safeguards against short circuits, overloads, overvoltage, undervoltage, and leakage. Zero-interruption power supply technology ensures continuous power delivery to video surveillance cameras even during system reboots, maintaining uninterrupted video services throughout the restart process.
Diverse Power Supply Interfaces Various Data Transmission	The system provides multiple power supply options including AC220V, AC24V, and DC12V modules. Each port supports remote control and data transmission via wired, 4G, and other methods. It also offers compatibility with multiple interfaces including RS232, RS485, CAN, I2C, DI, and DO.

"Secure" Series - Product Parameters

Model	THCB-S		Brand	Defense · Vanguard
Opening Method	Left-Hinged Door		Material	SGCC (Hot-Dip Galvanized Steel)
Protection Rating	IP55		Color	<div><div>High-Gloss White</div><div>White Sand Texture</div><div>Light Gray</div><div>Silver</div><div>Light Green</div><div>Army Green</div></div>
Power Input	AC220V		Cable Entry	Bottom Entry
Operating Temperature	Ambient temperature: -30 ℃ ~ +65 ℃		Air Duct Type	Top Air Duct
Operating Humidity	Relative Humidity: ≤ 95%, Atmospheric Pressure: 70 ~ 106Kpa, Storage Temperature: -45 ℃ ~ +55 ℃			
Standard Configuration (Model A)	Modules	THMC-MGLTE1-1202: Main Control Module (Metering + Positioning + LTE Cat1 Communication) THCE-DC012-03A-06S: 1× DC12V Input; 6× DC12V/3A Output Module THCE-AC220-05A-03S: 1× AC220V Input; 3× AC220V/5A Output Module THCS-R-05ES: 5-Port 10/100M Switching Module		
	Accessories	2-In-1 Antenna, Isolation Switch, Surge Protector (40KA), Electromagnetic Lock, Cooling Fan, Fiber Splicing Tray, Mesh Mounting Panel, Cable Fixing Base, Fiber Spool, Pole/Wall Mounting Kit (1 set)		
Expansion Ports	The system supports 1/2/4/6/8 routing ports, 2/4/6/8 switching ports, controllable output ports including DC5V, DC9V, DC12V, DC36V, and AC220V, and is compatible with both surge protection modules and communication modules.			
Features	<div>1. Material: The enclosure is constructed from high-quality 1.0mm thick cold-rolled steel plate with spray-coated surface finish, providing waterproof, dustproof, and corrosion-resistant properties.</div> <div>2. Configuration: Includes a 2P 32A isolation switch and a 40KA power surge protector.</div> <div>3. Features:<div>◇Based on ARM architecture and SoC technology, with built-in MQTT and Ethernet modules, the system enables mains power failure detection, temperature-controlled fan operation, remote control, network transmission monitoring, and internal cabinet temperature monitoring. It interacts in real time with the monitoring center via IoT or metropolitan area networks, and proactively alerts the center in the event of network interruption, equipment failure, mains power interruption, or excessive internal cabinet temperature for comprehensive power and network outage monitoring.</div><div>◇Supports 2G/4G and other networks for IoT data transmission, with modes including wireless, wired, automatic wired/wireless switching, and wireless backup.</div><div>◇Positioning function: GNSS automatic positioning supports automatic acquisition of latitude and longitude, automatically marks location information on the platform map, and tracks location changes with real-time updates.</div><div>◇Intelligent early warning function: Video recording integrity check, optical fiber link fault detection, server abnormality detection, local hardware fault detection, and camera failure detection, etc.</div><div>◇Electrical health monitoring: Input voltage, output current, and load power monitoring with customizable thresholds on the platform; alerts for voltage, current, and power anomalies.</div><div>◇Temperature and humidity monitoring: Real-time internal temperature and humidity tracking with user-defined thresholds via the client interface; alerts for exceeding/falling below set values via the client interface, indicating excessively high or low temperature/humidity conditions.</div><div>◇Power outage monitoring: Built-in power monitoring module distinguishes between regional power failures (e.g., mains outage) and internal power failures (e.g., circuit breaker trip) without requiring backup power; alerts are uploaded to the client platform with dedicated outage status icons.</div><div>◇Network disconnection monitoring: Alerts will be shown on the platform when network connectivity is lost within the enclosure.</div><div>◇Remote control: Remote activation, deactivation, and reboot of load power supply to resolve front-end device freezes; remote activation/deactivation of voice alarms.</div><div>◇Uninterrupted load power supply: Continuous power delivery to the internal circuits even if the intelligent operation and maintenance terminal itself fails, provided that the external power supply is functioning normally, ensuring that all internally powered devices maintain uninterrupted operation.</div><div>◇Remote upgrade: Supports remoter system updates via the client platform.</div><div>◇QR Code / Remote Unlocking: The enclosure door is equipped with an electromagnetic lock, which together with the intelligent O&M host module enables remote unlocking and on-site unlocking via mobile QR code scanning.</div><div>◇APP integration: Bi-directional data synchronization between mobile app and client platform.</div><div>◇Includes 3-year warranty and IoT communication service fees.</div></div>			

	Model A		Model B	
External Dimensions (W×H×D)	400 × 550 × 250		External Dimensions (W×H×D)	350 × 480 × 170
Internal Dimensions (W×H×D)	398 × 487 × 229		Internal Dimensions (W×H×D)	328 × 408 × 153
Weight (kg)	16KG		Weight (kg)	15KG

The above parameters are for reference only. Parameters for Model B are subject to the actual product. (Both Model A and Model B can be customized according to customer requirements)

Intelligent Device Enclosure

"Peak" Series

Designed for all-weather outdoor use in exposed environments, the "Peak" Series intelligent device enclosure incorporates internal components such as AC expansion modules, DC expansion modules, data port expansion modules, switching port expansion modules, routing port expansion modules, fiber splicing trays, cooling fans, cable fixing bases, and door locks. Internal components feature modular installation, allowing each unit to be replaced independently. It is suitable for intelligent buildings, smart residential communities, integrated monitoring systems, intelligent security video surveillance, Safe City monitoring, and Sharp Eyes projects.

- Lightning Protection
- Corrosion-Resistant
- Sturdy Structure
- Modular Installation
- Customized Coating
- Wind and Rain Resistance
- Efficient Heat Dissipation



Functional Features

Flexible Combination of Service Circuit Boards - Customizable On Demand

A wide range of circuit boards is available, including main control modules, AC expansion modules, DC expansion modules, data port expansion modules, switching port expansion modules, and routing port expansion modules, which can be easily installed and tailored to different application scenarios, offering flexible configuration.

Industrial-Grade Security and High-Reliability Design

Designed to operate within industrial temperature ranges and featuring professional outdoor lightning protection, the system includes power supply safeguards against short-circuit. Zero-interruption power supply technology ensures continuous power delivery to video surveillance cameras even during system reboots, maintaining uninterrupted video services throughout the restart process.

Precise Fault Localization for Rapid Troubleshooting

Accurately distinguishes between mains power, network, and equipment failures, with detailed fault analysis. Supports detection of various anomalies including mains power abnormalities, overvoltage, fiber faults, temperature/humidity deviations, unauthorized door opening, and enclosure vibration.

Diverse Power Interfaces & Various Data Transmission

The system provides multiple power supply modules including AC220V, AC24V, DC12V, and DC36V. Each port supports remote control and data transmission via wired, 4G, and other methods. It also offers compatibility with multiple interfaces including RS232, RS485, CAN, I2C, DI, and DO.

"Peak" Series - Product Parameters


Model	THCB-P		Brand	Defense · Vanguard
Opening Method	Left-Hinged Door		Material	SGCC (Hot-Dip Galvanized Steel)
Protection Rating	IP55		Color	<div><div>High-Gloss White</div><div>White Sand Texture</div><div>Light Gray</div><div>Silver</div><div>Light Green</div><div>Army Green</div></div>
Power Input	AC220V		Cable Entry	Bottom Entry
Operating Temperature	Ambient temperature: -30℃ ~ +65℃		Air Duct Type	Top Air Duct
Operating Humidity	Relative Humidity: ≤ 95%, Atmospheric Pressure: 70 ~ 106Kpa, Storage Temperature: -45℃ ~ +55℃			
Standard Configuration (Model A)	Modules	THMC-MGLTE4-1202: Main Control Module (Metering + Positioning + LTE Cat4 Communication) THCE-DC012-03A-06S: 1× DC12V Input; 6× DC12V/3A Output Module THCE-AC220-10A-03S: 1× AC220V Input; 3× AC220V/10A Output Module THCS-R-08GS: 8-Port 10/100/1000M Adaptive Switching Module; THDD-24CI-0402: Data Transparent Transmission Module		
	Accessories	2-In-1 Antenna, Isolation Switch, Surge Protector (40KA), Electromagnetic Lock, Cooling Fan, Fiber Splicing Tray, Mesh Mounting Panel, Cable Fixing Base, Fiber Spool, Light Sensor, Vibration Sensor, Pole/Wall Mounting Kit		
Expansion Ports	The system supports 1/2/4/6/8 routing ports, 2/4/6/8 switching ports, controllable output ports including DC5V, DC9V, DC12V, DC36V, and AC220V, and is compatible with both surge protection modules and communication modules.			
Features	<div>1. Material: The enclosure is constructed from high-quality 1.0mm thick cold-rolled steel plate with spray-coated surface finish, providing waterproof, dustproof, and corrosion-resistant properties.</div> <div>2. Configuration: Includes a 2P 32A isolation switch and a 40KA power surge protector.</div> <div>3. Features:<div>◇Based on ARM architecture and SoC technology, with built-in MQTT and Ethernet modules, the system enables mains power failure detection, temperature-controlled fan operation, remote control, network transmission monitoring, and internal cabinet temperature monitoring. It interacts in real time with the monitoring center via IoT or metropolitan area networks, and proactively alerts the center in the event of network interruption, equipment failure, mains power interruption, or excessive internal cabinet temperature for comprehensive power and network outage monitoring.</div><div>◇Supports 2G/4G and other networks for IoT data transmission, with modes including wireless, wired, automatic wired/wireless switching, and wireless backup.</div><div>◇Positioning function: GNSS automatic positioning supports automatic acquisition of latitude and longitude, automatically marks location information on the platform map, and tracks location changes with real-time updates.</div><div>◇Intelligent early warning function: Video recording integrity check, optical fiber link fault detection, server abnormality detection, local hardware fault detection, and camera failure detection, etc.</div><div>◇A light sensing monitoring function that distinguishes between three levels of light conditions inside the enclosure (low light, moderate light, and strong light) on the platform, assisting in determining whether the enclosure door is open.</div><div>◇Electrical health monitoring: Input voltage, output current, and load power monitoring with customizable thresholds on the platform; alerts for voltage, current, and power anomalies.</div><div>◇Temperature and humidity monitoring: Real-time internal temperature and humidity tracking with user-defined thresholds via the client interface; alerts for exceeding/falling below set values via the client interface, indicating excessively high or low temperature/humidity conditions.</div><div>◇Vibration Monitoring: Detects shocks or impacts to the enclosure and triggers vibration alerts on the platform. Allows users to set frequency thresholds for vibration alarms.</div><div>◇Power outage monitoring: Built-in power monitoring module distinguishes between regional power failures (e.g., mains outage) and internal power failures (e.g., circuit breaker trip) without requiring backup power; alerts are uploaded to the client platform with dedicated outage status icons.</div><div>◇Network disconnection monitoring: Alerts will be shown on the platform when network connectivity is lost within the enclosure.</div><div>◇Remote control: Remote activation, deactivation, and reboot of load power supply to resolve front-end device freezes; remote activation/deactivation of voice alarms.</div><div>◇Uninterrupted load power supply: Continuous power delivery to the internal circuits even if the intelligent operation and maintenance terminal itself fails, provided that the external power supply is functioning normally, ensuring that all internally powered devices maintain uninterrupted operation.</div><div>◇Remote upgrade: Supports remoter system updates via the client platform.</div><div>◇QR Code / Remote Unlocking: The enclosure door is equipped with an electromagnetic lock, which together with the intelligent O&M host module enables remote unlocking and on-site unlocking via mobile QR code scanning.</div><div>◇APP integration: Bi-directional data synchronization between mobile app and client platform.</div><div>◇Includes 3-year warranty and IoT communication service fees.</div></div>			


Model A		Model B	
External Dimensions (W×H×D)	400 × 550 × 250	External Dimensions (W×H×D)	350 × 480 × 170
Internal Dimensions (W×H×D)	398 × 487 × 229	Internal Dimensions (W×H×D)	328 × 408 × 153
Weight (kg)	16KG	Weight (kg)	15KG


The above parameters are for reference only. Parameters for Model B are subject to the actual product.
(Both Model A and Model B can be customized according to customer requirements)


Intelligent Device Enclosure "Vast" Series


The "Vast" Series intelligent equipment enclosure adopts a standard cabinet structure design, with internal space meeting the installation requirements of rack-mounted equipment. Suitable for outdoor environments, it features rainproof, dustproof, aging-resistant, rust-resistant, and intelligently controlled capabilities, along with quick installation. The interior includes a power surge protector, power distribution unit, fiber splicing tray, cooling fan, and door switch. It is designed for video surveillance applications such as the Sharp Eyes Project, Safe City, and Intelligent Transportation System checkpoints.


Rainproof


Windproof


Efficient Heat Dissipation


Corrosion-Resistant

Lightning Protection

Dustproof

Sturdy Structure

Modular Installation

Customized Coating

IP55
Ingress Protection Rating



Functional Features

Integrated Design

Integrates AC power interfaces, DC power interfaces, network transmission interfaces, and sensor interfaces. Compared to independent modular designs, it reduces connection wiring and potential failure points.

Detailed Fault Analysis

Capable of identifying over 10 types of faults, including mains power failures, DC abnormalities, fiber optic faults, cable failures, and device hardware failures. Utilizes a multi-tier detection mechanism combining power supply monitoring, network diagnostics, and channel inspection at the front end, with back-end platform verification to enable real-time and efficient analysis of video system faults.

Spacious Interior

Ample internal space is reserved for equipment installation, featuring standard electrical mounting panels for power devices. The vertical posts on both sides allow flexible adjustment of shelf positions.

Multiple Power Specifications

Supports power output interfaces including AC220V, AC24V, DC12V, and DC5V. Each power circuit features independent detection and control, adapting to the power requirements of cameras in various scenarios.

Industrial-Grade Security and High-Reliability Design

Zero-interruption power supply technology ensures continuous power delivery to video surveillance cameras even during system reboots or failures, maintaining uninterrupted video services throughout the restart process.

Model	THCB-V		Brand	Defense · Vanguard
External Dimensions (W×H×D)	600 × 1450 × 450		Internal Dimensions (W×H×D)	597 × 1197 × 397
Weight (kg)	72.8KG		Material	SGCC (Hot-Dip Galvanized Steel)
Opening Method	Left-Hinged Door		Color	<div><div>High-Gloss White</div><div>White Sand Texture</div><div>Light Gray</div><div>Silver</div><div>Light Green</div><div>Army Green</div></div>
Protection Rating	IP55		Cable Entry	Bottom Entry
Power Input	AC220V		Air Duct Type	Top Air Duct
Operating Temperature	Ambient temperature: -30℃ ~ +65℃		Operating Humidity	Relative Humidity: ≤ 95%, Atmospheric Pressure: 70 ~ 106Kpa, Storage Temperature: -45℃ ~ +55℃
Expansion Ports	The system supports 1/2/4/6/8 routing ports, 2/4/6/8 switching ports, controllable output ports including DC5V, DC9V, DC12V, DC36V, and AC220V, and is compatible with both surge protection modules and communication modules.			
Standard List	Modules	Customization		
Features	<div>1. Based on ARM architecture and SoC technology, with built-in MQTT and Ethernet modules, the system enables mains power failure detection, temperature-controlled fan operation, remote control, network transmission monitoring, and internal cabinet temperature monitoring. It interacts in real time with the monitoring center via IoT or metropolitan area networks, and proactively alerts the center in the event of network interruption, equipment failure, mains power interruption, or excessive internal cabinet temperature for comprehensive power and network outage monitoring.</div> <div>2. Supports 2G/4G and other networks for IoT data transmission, with modes including wireless, wired, automatic wired/wireless switching, and wireless backup.</div> <div>3. Security protection function: The system supports external door magnetic sensor detection, generating alerts when the enclosure door is abnormally opened. It also features a built-in speaker module that can output local warning sounds to deter malicious tampering with the enclosure, ensuring maximum protection for assets and information security inside the enclosure.</div> <div>4. Positioning function: GNSS automatic positioning supports automatic acquisition of latitude and longitude, automatically marks location information on the platform map, and tracks location changes with real-time updates.</div> <div>5. Intelligent early warning: Video recording integrity check, optical fiber link fault detection, server abnormality detection, local hardware fault detection, and camera failure detection, etc.</div> <div>6. Light sensing monitoring: A light sensing monitoring function that distinguishes between three levels of light conditions inside the enclosure (low light, moderate light, and strong light) on the platform, assisting in determining whether the enclosure door is open.</div> <div>7. Electrical Health Monitoring: Input voltage, output current, and load power monitoring with customizable thresholds on the platform; alerts for voltage, current, and power anomalies.</div> <div>8. Temperature and humidity monitoring: Real-time internal temperature and humidity tracking with user-defined thresholds via the client interface; alerts for exceeding/falling below set values via the client interface, indicating excessively high or low temperature/humidity conditions.</div> <div>9. Vibration monitoring: Detects shocks or impacts to the enclosure and triggers vibration alerts on the platform. Allows users to set frequency thresholds for vibration alarms.</div> <div>10. Power outage monitoring: Built-in power monitoring module distinguishes between regional power failures (e.g., mains outage) and internal power failures (e.g., circuit breaker trip) without requiring backup power; alerts are uploaded to the client platform with dedicated outage status icons.</div> <div>11. Network disconnection monitoring: Alerts will be shown on the platform when network connectivity is lost within the enclosure.</div> <div>12. Remote control: Remote activation, deactivation, and reboot of load power supply to resolve front-end device freezes; remote activation/deactivation of voice alarms.</div> <div>13. Uninterrupted load power supply: Continuous power delivery to the internal circuits even if the intelligent operation and maintenance terminal itself fails, provided that the external power supply is functioning normally, ensuring that all internally powered devices maintain uninterrupted operation.</div> <div>14. Remote upgrade: Supports remoter system updates via the client platform.</div> <div>15. APP integration: Bi-directional data synchronization between mobile app and client platform, enabling real-time updates of issue lists, work order statuses, processing progress, and image uploads.</div>			

The above parameters are for reference only. Customization is available based on customer requirements. Actual specifications may vary.

Application Areas



Smart Street Lighting



Smart Transportation



Smart City



Sharp Eyes Project



Safe Campus



Urban Management



Smart Fire Protection



Smart Water Management



Unmanned Weather Stations

Application Cases



Inner Mongolia
Dongsheng District Digital City
Construction Project, Ordos



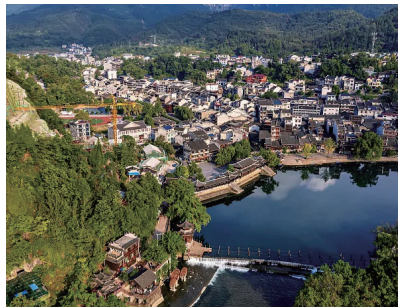
Miluo
Miluo Public Security "Skynet"
Surveillance Project



Shaoyang
Phase I Intelligent Transportation
Project in Shaoyang Urban Area



Changsha
Changsha Key Livelihood Project "Sharp
Eyes Project" Phase V



Huayuan, Xiangxi
Phase I Smart City Project of Huayuan
County Urban-Rural Integration
Construction Project



Guzhang/Baojing, Xiangxi
Guzhang Social Management Electronic
Surveillance System
Baojing Social Management Electronic
Surveillance System



Dahua, Guangxi
Dahua County Safe Rural
Construction Project



Mayang
Mayang "Sharp Eyes Project" for
Primary and Secondary Schools



Fenghuang, Xiangxi
Fenghuang County Urban Bus Restricted
Zone Violation Monitoring Project