KSTAR

Data Center Integrated Solution

IDU | IDM | IDB | IOU Series

KSTAR Overview

Founded in 1993 and listed on the Shenzhen Stock Exchange in 2010, KSTAR has specialized in the research, development, and manufacturing of **UPS, Precision Air Conditioner and Modular Data Center, Battery, PV Inverter, Energy Storage, and EV Charger** for over 30 years. It is a leading provider of comprehensive solutions in the smart energy sector.

1993
Founded in

2010
Listed in

4300+
Employees

2
R&D Centers

8
Manufacturing Bases

180+
Countries and Regions

Market Achievement

Global UPS Manufacturer

The Valve-regulated Sealed Lead-acid Battery Products Ranked First in the Chinese Mainland Market in 2024-2025

Five Automatic Production Lines
The Annual Production Capacity is 3 Million kVAh

Cumulative Sales Reached 55 Million Units
A Large-scale National Industry System
National Unified Selection

Source: Omdia's “UPS Hardware Annual Tracker 2025”
2024-2025 Annual Report on China's UPS Battery Market (ICT Research)

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IDU Data Center Solution

Product Introduction

Introduction

The Kstar IDU intelligent micro-unit data center integrates the cabinet system, power distribution system, UPS system, cooling system, monitoring system, fire fighting system and other subsystems. Occupied small footprint, the IDU integrated solution is flexible to expand and can be deployed quickly due to the pre-fabricated. To realize the energy-saving target of lower PUE, IDU is equipped with sealed cold aisle and hot aisle standardly while short cooling path reducing the loss of cold air dramatically.

Single Cabinet

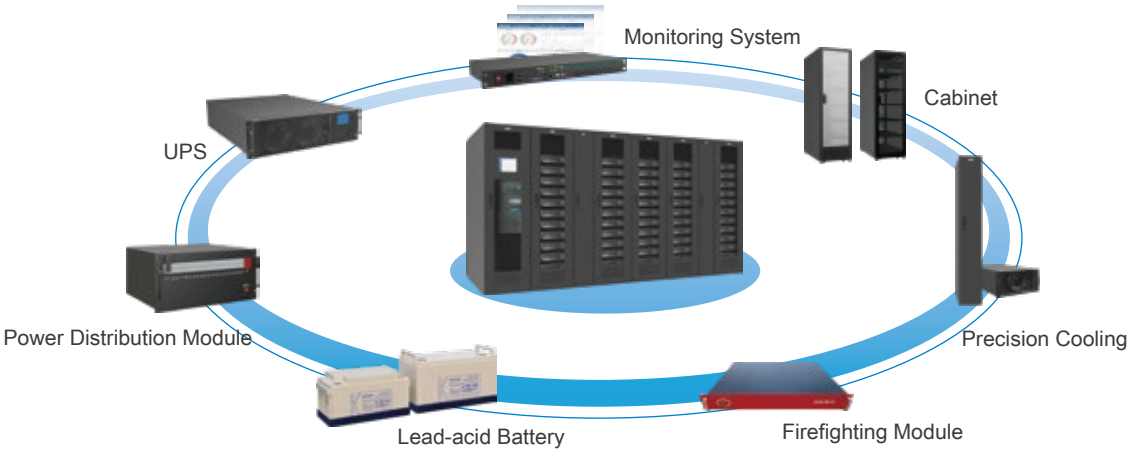
Double Cabinets

Multiple Cabinets (3-9)

Application Scenarios

- Small/micro data center
- Small branches of financial industry
- Government computer room
- Computer room < 30m²
- 5G telecom station
- Small and medium-sized enterprise self-use computer room
- Other computer room of service facilities

Main Architecture and Composition of the System



Cabinet System	Power Distribution System	UPS System	Battery System
◆ 19-inch standard cabinet with meshes for ventilation ◆ 19-inch standard cabinet with closed aisles ◆ LED strip	◆ ATS module (Optional) ◆ Rack-mounted mains module ◆ Rack-mounted UPS distribution module ◆ Rack-mounted expansion module (Optional) ◆ Battery switch module (Optional) ◆ PDU	◆ Rack-mounted single-phase input single-phase output high-frequency UPS ◆ Rack-mounted three-phase input single-phase output/three-phase input three-phase output high frequency UPS ◆ Subrack UPS ◆ Capacity: 10 kVA~150 kVA	◆ Lead-acid battery ◆ Capacity: 7AH~250AH

Cooling System	Monitoring System	Other Accessories
◆ Rack-mounted cooling unit ◆ Inrow cooling unit	◆ Monitoring server ◆ 7-inch/10-inch touch screen ◆ UPS/cooling/power distribution ◆ T&H sensor, smoking sensor, water leakage sensor and door sensor	◆ Cable tray ◆ Tray ◆ Blind panel

Product Features

Cabinet System

- The cabinet is of integrated form, with better compatibility and sealing performance
- Complete hot and code aisle containment, with high utilization rate of cooling capacity
- The static load bearing capacity of the cabinet reaches the industry-leading level
- By adopting the safety patent of the unique bounce-open door, safety of the power distribution system is ensured

Distribution System

- High-efficiency UPS with the power factor 0.9 (1.0 optional)
- Lead-acid battery, with patented technology of the leak-proof tray, safety of the battery during use is ensured
- Intelligent lithium battery, meeting the power backup requirements for high density and high circulation ratio

Cooling System

- With a wide cooling range of the rack-mounted or inrow cooling, meeting the requirements for nearby cooling as well as and consumption reduction

Monitoring System

- Intelligent monitoring all-in-one machine, meeting the requirements for streamlined monitoring of single and double cabinet (s)
- Intelligent access control system, supporting face recognition, with higher security

Firefighting Module

- Rack mounted fire fighting module, better protect the equipments inside the cabinet

Customer Value

Safe and Reliable

Professional Platform and Resources

Self-developed and Manufactured

- Strong team for full product R&D
- More than 210 domestic and foreign core patents
- 300,000㎡ intelligent manufacturing park

Good Services

- Domestic professional service team
- 7×24 round the clock response

Focused and Professional

- Being focused on deep cultivation for nearly 30 years
- Provision of one-stop solutions

Characteristics and Values

- When a fault occurs in the cooling system, the emergency ventilation system will be automatically turned on to ensure the normal operation of interior equipment
- By adopting the rack-mounted firefihgting module, the requirements for rapid fire extinguishing nearby can be met; and when there is no fire protection equipment in the cabinet, the smoke detector can directly trigger the bounce-open door system to ensure the fast access of the firefihgting module and the sensing system, so as to realize rapid fire extinguishing
- With the unique patent of the leak-proof tray for the battery, ensuring the safety protection against collisions and electrolyte leakage during transportation and handling
- With the self-developed intelligent battery management system (BMS), power backup in the data center is safer and more reliable
- The load bearing capacity of the cabinet reaches the industry-leading level
- With the national-level laboratory accredited by CNAS, the product quality is effectively guaranteed, and the design level of the researched and developed new product is represented

Efficient and Energy-saving

Solution-level hot and cold aisle containment + Dual EC variable-frequency precision cooling units + Efficient UPS

Characteristics and Values

- By closing the aisles, hot and cold airflow are isolated, the loss of cooling capacity is avoided, and the efficiency of the cooling unit is greatly improved
- By adopting the nearby air supply method with the closed aisles for the high-efficiency rack-mounted or inrow cooling units, the energy-saving effect is further improved
- With the output power factor of 1.0, the overall efficiency is as high as 96%, which greatly saves power consumption and reduces operating costs
- With intelligent monitoring supported energy efficiency monitoring, energy efficiency analysis and energy efficiency optimization, energy efficiency utilization is comprehensively improved

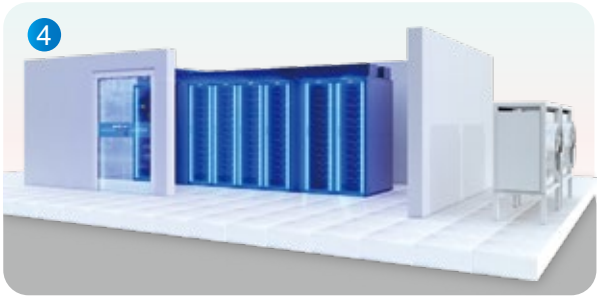
Rapid Deployment

Factory prefabrication, pre-installation, and pre-commissioning

Overall packaging and transportation

Only by simple cabinet combination, line termination and cooling unit pipeline connection can complete the installation

Power-on test, delivery and acceptance

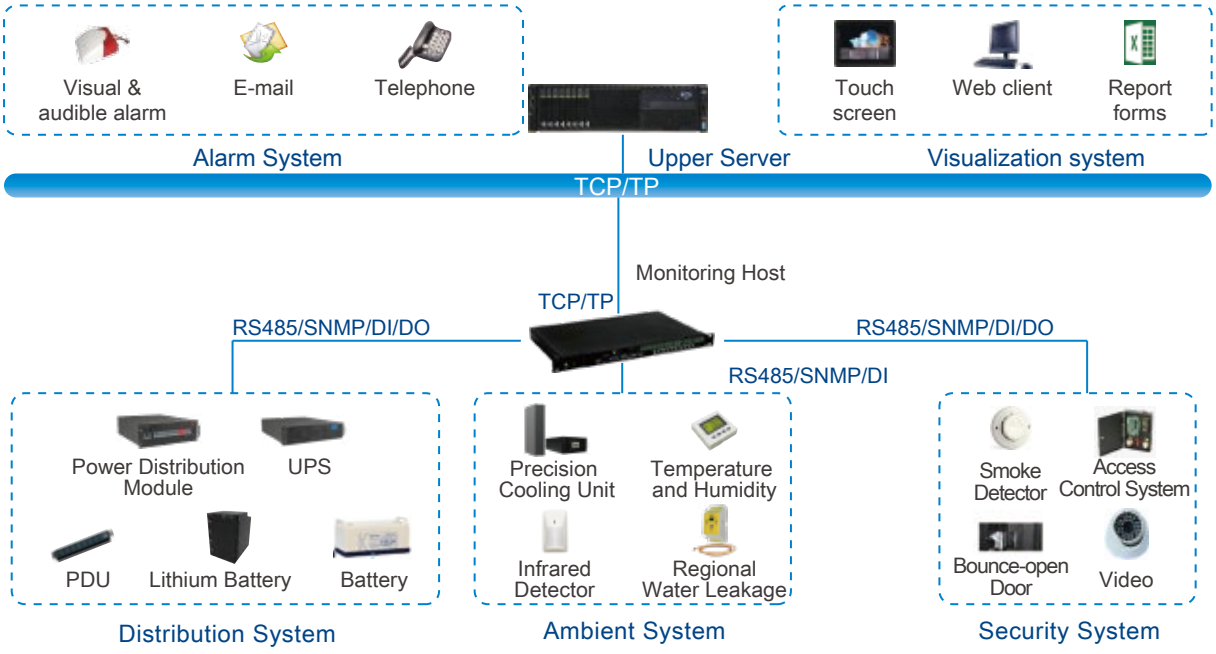


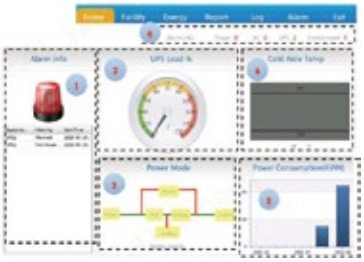
Characteristics and Values

- The only enterprise with the self-owned brand and with all main equipment being researched and manufactured on our own, ensuring complete compatibility of all systems and components
- Factory pre-installation, pre-commissioning power distribution, UPS, cooling, monitoring, aisle and other systems
- With modular design and manufacturing for all products, deployment in phases can be realized, ensuring quality and rapid delivery
- On-site installation of single and dual cabinet(s) only takes 4 hours, saving installation costs, and meeting the need for rapid business launch

Intelligent Management

Monitoring Solution for IDU Micro-unit Data Center





Characteristics and Values

- The self-developed UPS is fully compatible with the battery, and the battery self-inspection system maintains battery activity, so that the battery life is greatly improved
- By adopting the intelligent face recognition system, monitoring and management are facilitated, while improving system security
- With the two-color LED strip design, the O&M personnel can visually distinguish the operation status of the system
- With the editable strategy design, the continuous optimization of energy saving is promoted through the statistics and display of power consumption data in peaks and valleys
- Local data is uploaded in real time, ensuring centralized monitoring and unified management for outlets by the upper management server

Specifications

Configuration	Single/Double cabinets	Multiple cabinets
General		
Number of cabinets	1/2	3-9
Sealed aisle	Hot and cold sealed aisles/Cold sealed aisle/No sealed aisle	
Cooling	Rack-mounted/In-row	
Battery deployment mode	Battery pack/Battery cabinet/Battery box/Battery rack	Battery cabinet/Battery box/Battery rack
Installation	Deploy on flat ground or deploy on raised floor	
Nominal voltage (Vac)	220/230/240, 1Ph+N+PE	380/400/415, 3Ph+N+PE
Fire fighting module (Optional)	Rack-mounted	
Wiring system (Optional)	Power cable tray/Signal cable tray	
Power Distribution System		
Input	Single input/Dual input (ATS optional)	
Input breaker	63/1P×1	125/1P or 125/3P or 160/3P or 250/3P or 320/3P
UPS capacity (kVA)	3/6/10	10/15/20/30/40/60/80/90/120
UPS system redundancy	N/N+1	N/N+1/2N (N=1)
Lightning protection level	Class C	
Maintenance bypass	32A/2P	63A/2P or 100A/2P or 40A/4P or 80A/4P or 125A/4P
Air conditioner switch (Standard)	40A/1P×2 or 63A/1P×2	40A/3P×(2~4) or 63A/3P×(2~3)
Output branch (Standard)	32A/1P×8 or 32A/1P×10	1. UPS distribution module : 1) 32A/1P×(3~14) 2) 12V DC power (12.5A/29A) 2.Expansion module: 32A/1P×(8/12/16/20)
Intelligent power meters	Standard	
Battery type	Lead-acid battery/Lithium battery	
Cooling System		
Power supply	Utility power	
Cooling system redundancy	N/N + 1	
Single cooling capacity (kW)	3.5~12.5	7.5~12.5
Compressor type	Inverter	Fixed speed/inverter
Monitoring System		
LCD display	7 inch touch screen (10.4 inch optional)	
Audible & Visual alarm	Optional	
T&H sensor	Standard	
Smoke sensor	Standard	
Water leakage sensor	Optional	
Door sensor	Standard	
Centralized monitoring of power distribution and cooling	Standard	
Electronic password lock	Optional	
Face recognition	Optional	
Fingerprint reader	Optional	
CCTV	Optional	
BMS	Optional	

Typical Configuration

Single Cabinet

Dual Cabinets

Optional Unit

RT Series
(3kVA)

RT Series
(6kVA)

Integrated power distribution module
(3kVA/6kVA)

Rack-mounted cooling unit
(3.5kW)

Supporting battery pack
(3kVA)

Supporting battery pack
(6kVA)

7-inch display screen

LED light strip

Layout of IDU Single-cabinet Series

Display screen 1

User space 2

Integrated power distribution module 3

3kVA UPS 4

Standard battery pack 5

Display screen 1

User space 2

Integrated power distribution module 3

6kVA UPS 4

Standard battery pack 5

3.5kW rack-mounted cooling 6

Layout of IDU Dual Cabinet Series

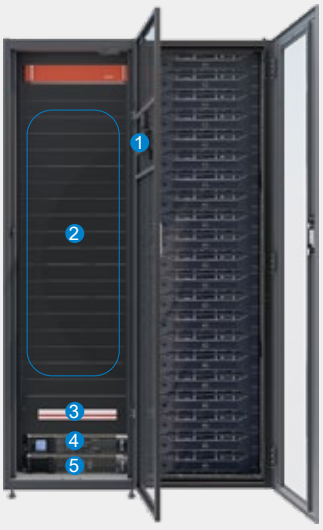
Display screen 1

User space 2

Integrated power distribution module 3

3kVA UPS 4

Standard battery pack 5



Display screen 1

User space 2

Integrated power distribution module 3

6kVA UPS 4

Standard battery pack 5

3.5kW rack-mounted cooling 6

IT Cabinet + 7.5/12.5/25.5kW Inrow Cooling Unit + Power Cabinet

+ Optional Unit

Mains Module
(15~40kVA)

UPS Distribution Module
(15~40kVA)

Expansion Module
(8 circuits~12 circuits)

15/20kVA-RT

30kVA-RT

40kVA-RT

Lead-acid battery
65Ah/100Ah

7-inch Display Screen

LED Light Strip

Layout

Airflow

1 UPS distribution module 2 Mains distribution module 3 20kVA UPS module

Hot air flow Cold air flow

1 UPS distribution module 2 Mains distribution module 3 30kVA UPS module

Hot air flow Cold air flow

1 Expansion module 2 UPS distribution module 3 Mains distribution module 4 40kVA UPS

Hot air flow Cold air flow

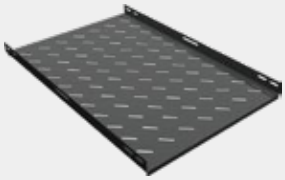
Accessories

Options for Cabinet System

Mesh Cabinet

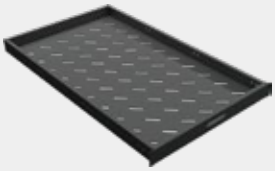
Closed IT Cabinet

Battery Cabinet



Fixed Tray

Movable Tray



Heavy-load Fixed Tray

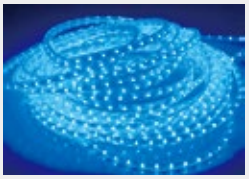
L-shaped Bracket

Blind Panel

Horizontal Cable Management

Vertical Cable Management

Tray



LED Strip

Bounce-open Door

Double-layer Insulated Glass for Front Door

Options for Power Distribution System

Integrated power distribution module
(For 3/6kVA UPS)

Integrated power distribution module
(For 10kVA UPS)

Mains module
(For 10/15/20/30/40kVA UPS)

UPS distribution module
(For 10/15/20/30/40kVA UPS)

Expansion module
(8/12/16/20 circuits)

Power Distribution Module

3~10kVA-RT UPS

15~40kVA-RT UPS

Subrack UPS (10 ~ 150kVA)

UPS | Battery Pack

ATS

Battery Switch

PDU

38~250AH

Lead-acid Battery

Battery Rack

Options for Cooling System

3.5/7/12.5kW

Rack-mounted Cooling

7.5/12.5/25kW

Cooling

Low Temperature kit

Extension Kit

Drainage Pump

Options for Monitoring System

Monitoring Host

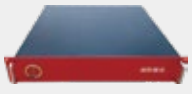
Smart Door Lock, Supporting Facial Recognition

Water Leakage Sensor

Temperature and Humidity Sensor

Smoke Detector

Options for Fire Protection



Rack-mounted fire extinguisher

IDM Modular Data Center Solution

Rooted in decades of craftsmanship expertise
Building efficient and intelligent data center solutions for all scenarios

KSTAR ITCube series IDM modular data center solution, integrates racks and enclosed aisle systems, power supply and distribution systems, cooling systems, monitoring systems, and integrated cabling systems into one solution, is factory-prefabricated to enable rapid deployment and flexible expansion, while featuring simplicity, intelligence, and high energy efficiency, ensuring reliable and secure operation of the data center.

Fully in-house Developed and Manufactured, Providing one-stop Services

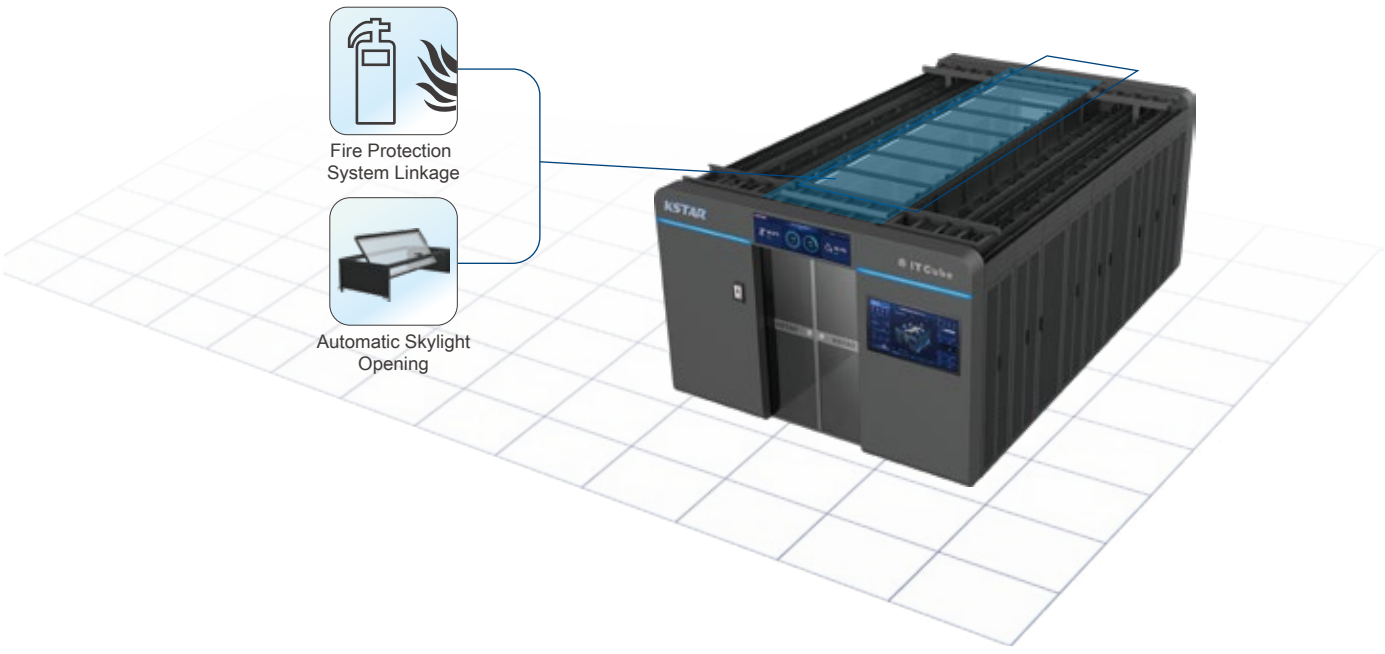
- UPS, air conditioner, liquid cooling CDU, cabinet, power distribution cabinet, batteries, and other equipment are all independently developed and manufactured
- A complete system software platform is available to meet specific customer requirements

One-stop Full-stack Product Solution for Data Center Infrastructure

UPS | Precision Cooling | Liquid Cooling CDU | Lead-acid/ Lithium Battery | ITCube™ Data Center Solution | Precision Distribution Cabinet | Network/Server Cabinet | Monitoring System

Safe and Reliable

- The modular system as a whole has passed Level 8 seismic performance testing, ensuring stable system operation
- The power supply and distribution system adopts A/B/C-tier power supply architectures to ensure reliable data center operation
- The fire protection system can be linked with the fire control system to enable automatic opening, emergency air supply, and shutdown, effectively ensuring data center fire safety



High Efficiency and Energy Saving

- Enclosed Hot and Cold Aisle Airflow Separation
- Average Annual PUE below 1.21
- Modular UPS System Efficiency Up to 97.1%

Simple and Intelligent

- Rapid deployment, flexible expansion
- Prefabricated products, plug-and-play, shortening the delivery cycle
- Real-time monitoring system with multiple alarm methods such as SMS, mobile app, and WeChat, enabling rapid response

24 hours Real-time Monitoring

Multiple alarm methods such as SMS and WeChat, enabling rapid response

Factory Prefabrication

Integrated Packaged Transportation

Simple cabinet combining, installation is completed after cable termination and air-conditioning piping connection

Power-on Testing Delivery Acceptance

7×24 Hours Uninterrupted After-sales Service Response

- More than 220 technical service stations around the world to quickly respond to customer service needs

Technical Service Personnel
450+

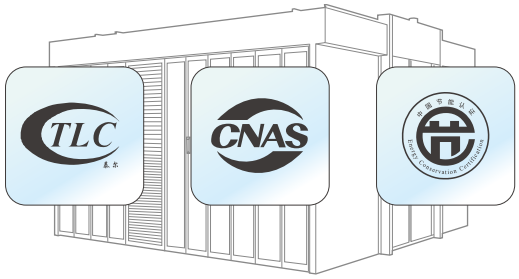
Technical Service Centers
78

Technical Service Stations
128

Hour Service Response
7×24 hours

Certification Guarantee

- The IDM modular data center solution as a whole has passed level 8 and level 9 seismic test certifications, device level TLC, energy saving and other certifications



Market Share and Awards

- Integrated Data Center Module sales have ranked among the top for many consecutive years (ICT Research)
- Won multiple awards for excellence in data center solution innovation

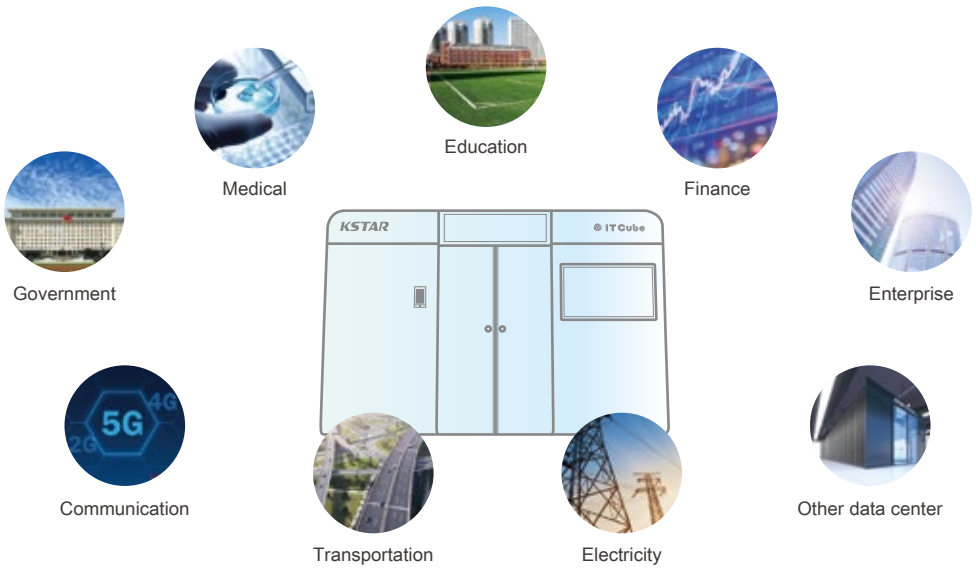
No.1

No.1 in Sales Revenue for Single-row Micro-module Products

Data Source: ICTresearch
"2024–2025 China Modular Data Center Product Market Annual Report"

Industry Applications

- Widely applied, suitable for data centers across various industries



Product Features

Modular Integration

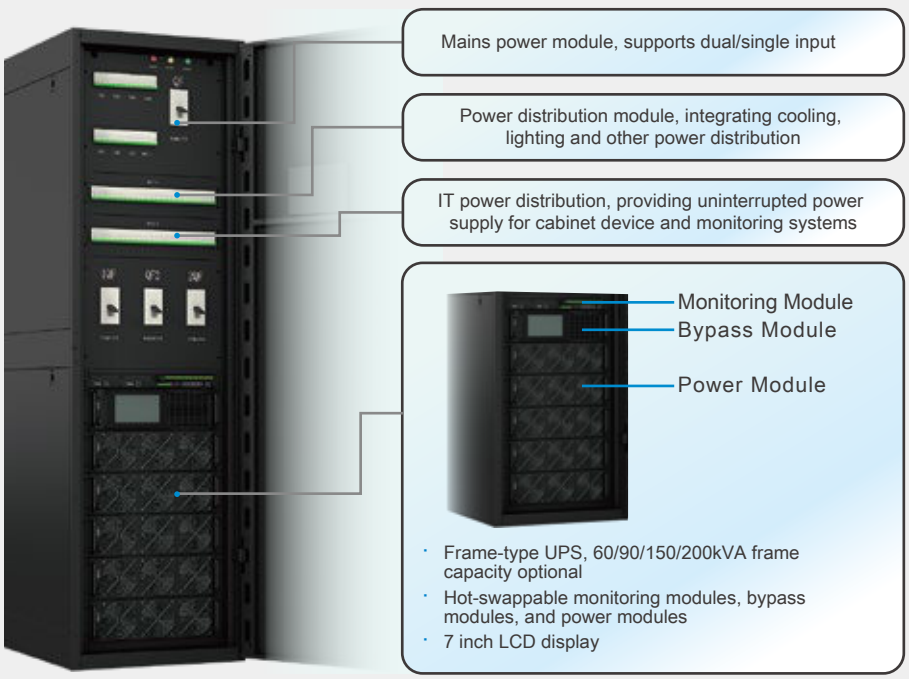
- Standardized integration of power distribution systems, cooling systems, cabinet systems and other subsystems, saving time and efforts for on-site installation
- The channel component system is easy to assemble, flexible to disassemble, and easy to transport

Air-cooled Micro-module Data Center

Air-liquid Hybrid Micro-module Data Center

Standardized and Flexible Design

- The power distribution subsystem supports multiple architectures such as 2N and N+1, meeting the requirements of A/B/C-tier data centers
- The UPS subsystem supports multiple configurations including integrated cabinets, in-row micro-module deployment, and external installation to meet different scenario requirements; the modular UPS adopts hot-swappable power modules with module power options of 10 / 15 / 20 / 25 / 30 / 40 / 50 / 100 kVA, and also supports hot-swappable bypass modules and monitoring modules

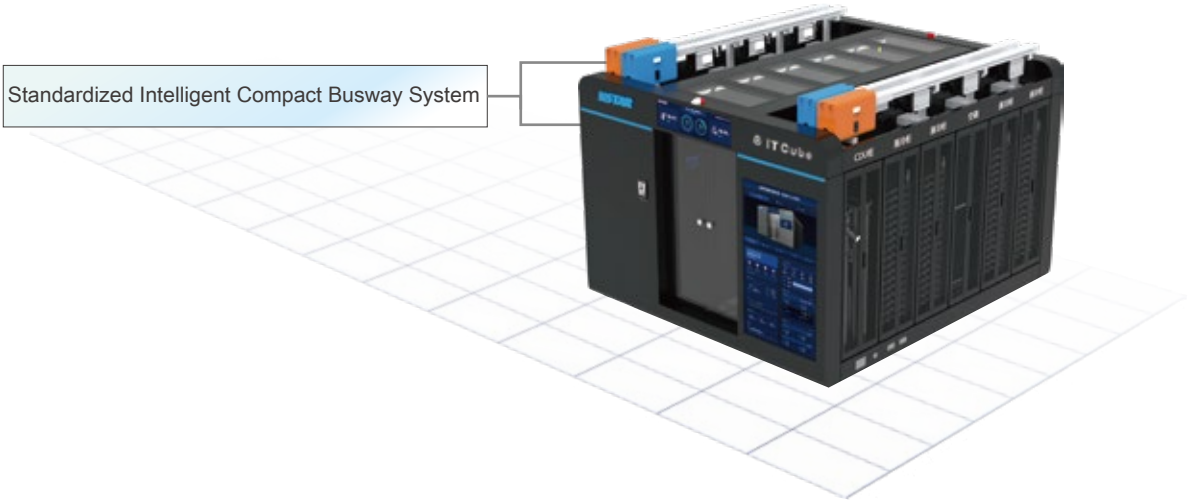


Integrated UPS Power Distribution Cabinet

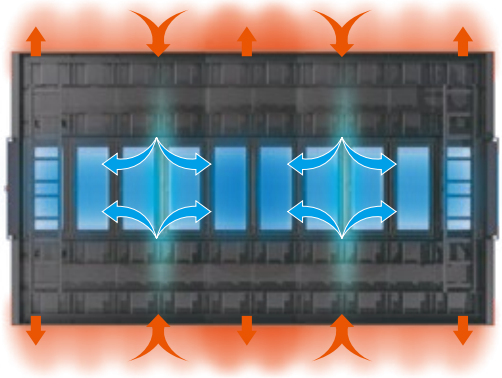
In-line UPS Cabinet

External Modular UPS

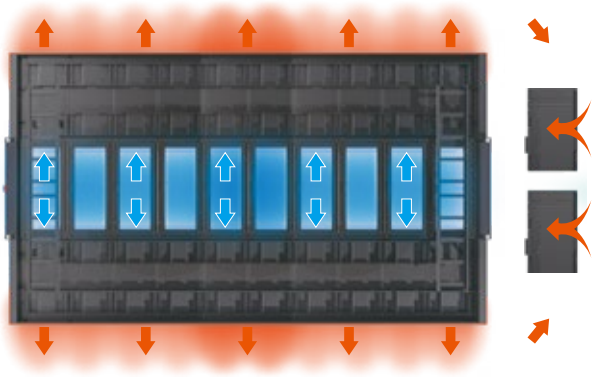
- Standardized intelligent compact busway system simplifies engineering installation, real-time monitoring, safe and reliable



- Adopt high-efficiency cooling, modular closed channel components, and hot and cold air flow isolation



In-row Precision Air Conditioner



Room-level Precision Air Conditioner

- LiquiX floor-standing liquid cooling CDU deployed in-row, air–liquid hybrid, suitable for intelligent computing high power-density application scenarios

Diverse Application Scenarios

Large-scale Data Centers:
Internet / Colo Cloud Data Centers

Small and Medium-sized Data Centers:
Government / Enterprise Data Centers

Intelligent Computing Centers

Edge Sites

Extensive Optional Configurations

- Immersive experience, 3D logo, real-time alarms
- 43.9-inch high-definition LED intelligent display; the screen lights up when people approach, displaying operating strategy data in linkage
- Optional 21.5 / 43 / 55 / 75-inch displays, flexible configuration
- Intelligent access control system supporting facial recognition, fingerprint, password, and IC card authentication

- Magnetic-suspension powered sliding door for air conditioning, quiet and smooth, unobstructed operation

- Intelligent lighting system: Lights turn on when occupied and turn off with a delay when unoccupied; lighting illuminance ≥ 500 lux

- A four-color LED strip graded alarm system provides intuitive visibility into the operating status of the micro-module, with synchronized color changes across the U1 interface and logo.

Normal Status

General Alarm

Critical Alarm

Emergency Alarm

- Cable trays and ladders enable power and weak-current segregation, while the single-sided covered tray design ensures clean and visually streamlined cabling.

- Cabinet-level ambient lighting, linkable with alarms, providing enhanced visual appeal
- Optional Cabinet Accessories

Refined Cabinet-level Lighting Effects

Shelves: Optional fixed, sliding, heavy-duty types, with a maximum load capacity of up to 120 kg

Blanking Panels: Air-leakage prevention baffles, plug-and-play installation, aesthetic, dust-proof design

Cable Management Components: Various vertical and horizontal mounting options

- Cabinet PDU supporting national standard / IEC output outlets, with optional industrial connector, surge protection and intelligent monitoring functions

National Standard Output

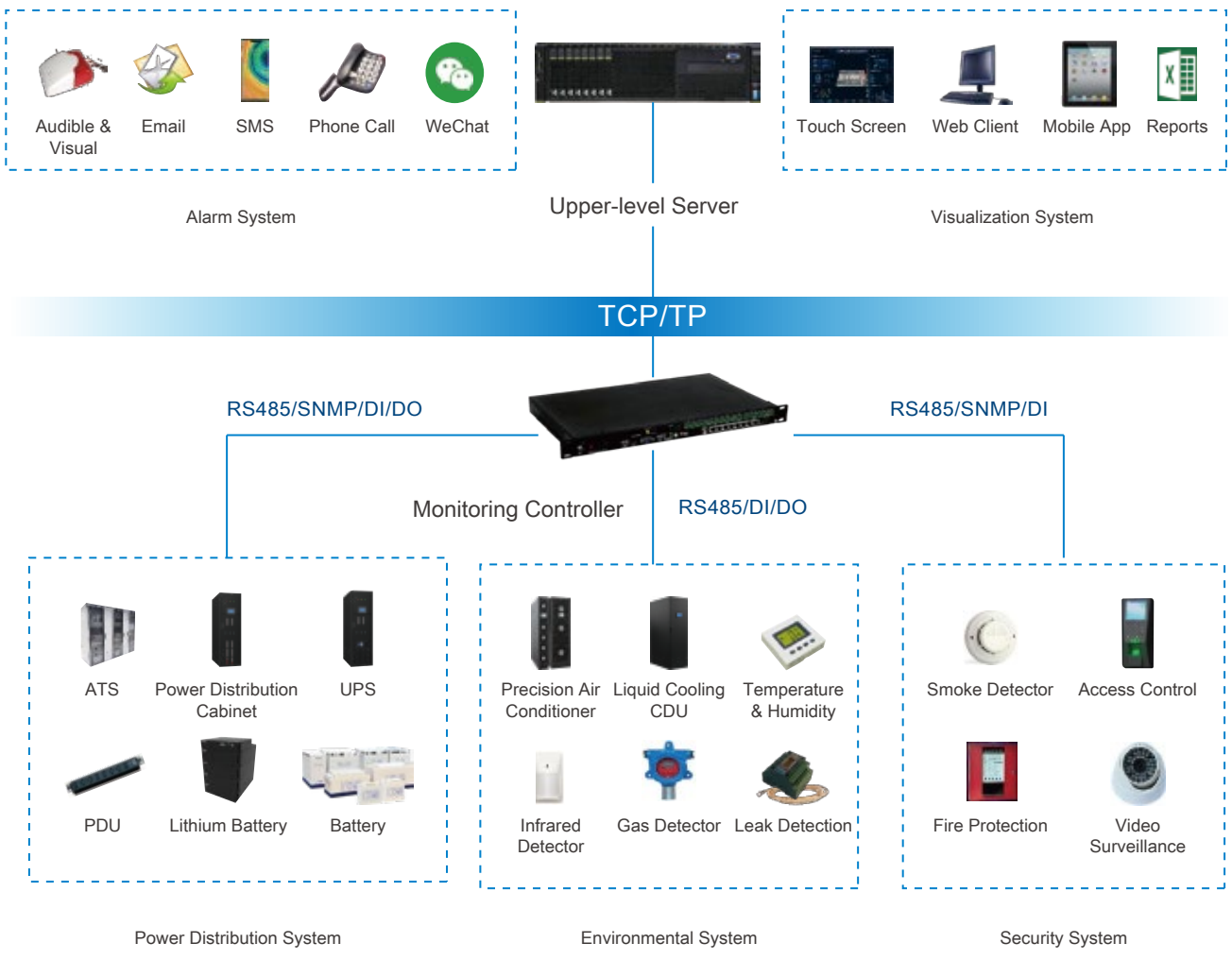
IEC Output

Industrial Connector

Intelligent Management

- Real-time visibility into the health status of power and environmental systems, intelligent monitoring, centralized management, multiple alarm methods, and simplified operations and maintenance
- A single system supports multiple monitoring and management scenarios, such as IDC data rooms, power distribution rooms, air-conditioning rooms, and distributed sites
- Open northbound interfaces are available for integration with existing management systems
- Supports configurable architecture design, enabling flexible and convenient functional expansion
- Based on a TCP/IP networking architecture, allowing flexible expansion with secure and reliable operation
- 2D/3D visualized human-machine interface, providing real-time operational views and integrating key indicators and information such as PUE, temperature, humidity, and utility voltage
- Three-in-one intelligent access control system with password, fingerprint, and card authentication, or facial recognition, simple and convenient

IDM Modular Data Center Solution Monitoring Topology Diagram



Visualization Monitoring System

- Configuration Software: the monitoring system adopts a fully configurable architecture, requiring no code modification, engineers can customize different interfaces according to customer requirements
- Flexible Access: supports web access (B/S), Android mobile app access, and WeChat official account access, providing high flexibility
- Strong Compatibility: compatible with third-party intelligent devices with open protocols (such as UPS and air conditioner), supporting serial communication protocols, SNMP, MODBUS TCP, and other communication protocols
- User-friendly Interfaces: supports SNMP and northbound Web API interfaces
- One-click switching between 2D/3D visualization systems, enabling real-time temperature cloud maps, power distribution topology display, rapid fault device localization, and other customized monitoring functions

IDM Modular Data Center Solution Visualized Monitoring System

Main Interface

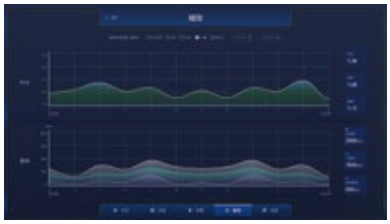
UPS

Power Distribution

Battery

Air Conditioner

Environment



Energy Efficiency

Security

Alarm

Specifications

System Category	Specification Description
General Characteristics	
Single-row IDM Dimensions (L×W×H), mm	L×2400 (2300)×2000/2200; L ≤15m; H equals rack height
Double-row IDM Dimensions (L×W×H), mm	L×3600 (3400)×2000/2200; L ≤15m; H equals rack height
Installation Method	Installation on raised anti-static floor (recommended) or directly on concrete floor
Cable Routing	Top cable routing or bottom cable routing
Power Distribution System	
In-row Integrated Power Distribution Cabinet	
Input Voltage	380/400/415Vac, 50/60Hz, 3Ph+N+PE
Input Method	Single/Dual
Total Input Main Switch Capacity (A)	250/400/630
Output Circuits	4~6*cooling input, 2*(24~34)*load branch
Surge Protection	B+C lightning protection
Others	7-inch touch screen, supports main and branch monitoring and remote monitoring
Frame-type UPS (matched with integrated power distribution cabinet)	
Input Voltage	380/400/415 Vac, 50/60 Hz, 3Ph+N+PE
Input Power Factor	≥0.99
Output Power Factor	1.0
Rated Capacity (kVA)	60~200
Overall Efficiency	>96%
In-row Precision Power Distribution Cabinet	
Input Voltage (Vac)	380/400/415, 50/60 Hz, 3Ph+N+PE
Input Current (A)	100~630
Input Method	Single/Dual/Multiple inputs optional
Output Circuits	Switch capacity 1–63A, maximum output 144P
Surge Protection	Optional Class B or Class C surge protection
Others	Color LED touch screen, supporting main and branch circuit monitoring and remote monitoring
In-row Modular UPS Cabinet	
Input Voltage	380/400/415 Vac, 50/60 Hz, 3Ph+N+P
Input Power Factor	≥0.99
Output Power Factor	1.0
Rated Capacity (kVA)	150~300
Overall Efficiency	>96%
Row-external Modular UPS	
Input Voltage	380/400/415 Vac, 50/60 Hz, 3Ph+N+PE
Input Power Factor	≥0.99
Output Power Factor	1.0
Rated Capacity (kVA)	≥200
Battery	
Battery Type	Lead-acid battery/Lithium iron phosphate ($LiFePO_4$) battery
Cooling System	
In-row Precision Air Conditioner	
IAir-cooled Cooling Capacity (kW)	07, 12, 25, 30, 40, 50, 60, 70; Supports fluorine pump energy-saving module
Chilled Water Cooling Capacity (kW)	25, 30, 40, 50, 65
Dimensions (W×D×H), mm	600×1100/1200×2000/2200
Room-level Precision Air Conditioner	
Air-cooled Cooling Capacity (kW)	25–120; Supports fluorine pump energy-saving module
Chilled Water Cooling Capacity (kW)	30 – 250
Dimensions (W×D×H), mm	928/1128/1828/2228/2728/3828×995×1975
Floor-standing Liquid Cooling CDU	
Liquid Cooling Capacity (kW)	80 – 600
Optional Items	Multi-medium detection/Dual power supply/Dry cooler/Localized leak detection
Pipe Size	φ19 – φ204
Dimensions (W×D×H), mm	600×1200×2000/1200×1200×2000
Rack System	
Dimensions (W×D×H), mm	600×1100/1200×2000/2200, 800×1100/1200×2000/2200
Protection Rating	IP20
Standard Configuration	Cabinet base plate; Cabinet coupling kit; Cable tie plate/Cable management trunking
Optional Accessories	PDU (GB/IEC optional); Blanking panels; Fixed/Sliding shelves; L-shaped brackets; Cable management frames; Light strips, etc.
In-row Battery Cabinet	
Dimensions (W×D×H), mm	600×1100/1200×2000/2200
Protection Rating	IP20
Monitoring System	
Alarm Methods	Sound and light alarms, email alarms, light-strip alarms; Customizable mobile SMS alarms, mobile app alarms, and voice call alarms
Access Methods	Remote web access, local 3D/2D display screens
Functional Modules	Centralized management (UPS/air conditioning/power distribution, etc.), access control system, video system, environmental system (including temperature & humidity and smoke detection)
Certifications	Seismic resistance, THIEL certification

Cases Show

A University Computing Center in Beijing

A Government Service Center Data Center in Shanxi Province

A Data Center in Jiangyou, Sichuan Province

An Enterprise Data Center in Gansu Province

An Enterprise Data Center in Shaanxi Province

A Data Center of a National Power Utility

IDB Outdoor Container Data Center Solutions

Product Introduction

Brief Introduction

Kstar IDB is an integrated solution for outdoor container data center infrastructure, which can be quickly deployed in a short time via factory pre-fabrication.

Kstar IDB can be used in various industries and scenarios, making it ideal for a wide range of industries and applications, and a highly effective solution for small outdoor data centers.

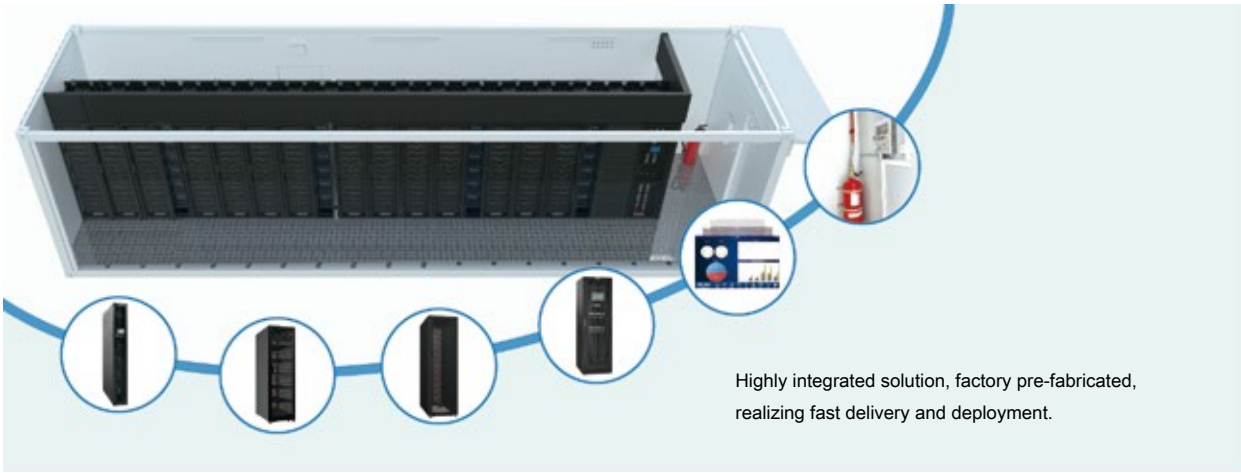
Application

Small data centers for enterprises	Small data centers for government, energy, education and other industries	Backup data center for financial industry	Operator's small computer room and edge site

Product Features & Value

Quick Deployment

- Integrated power distribution, cooling system, cabinets, sealed aisles, monitoring, firefighting and other major subsystems, factory pre-integration and pre-commissioning, shortening the delivery time
- All components is comply with domestic and international technical standards, support plug and play and easy to be installed. Also, it meets the requirements of international transportation, and can be shipped all over the world

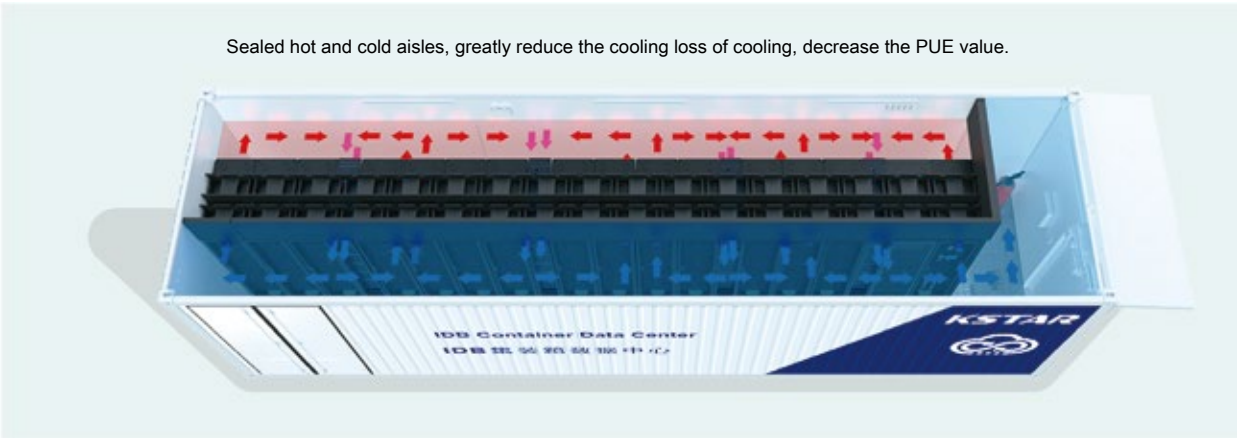


Highly integrated solution, factory pre-fabricated, realizing fast delivery and deployment.

High Efficiency and Energy Saving

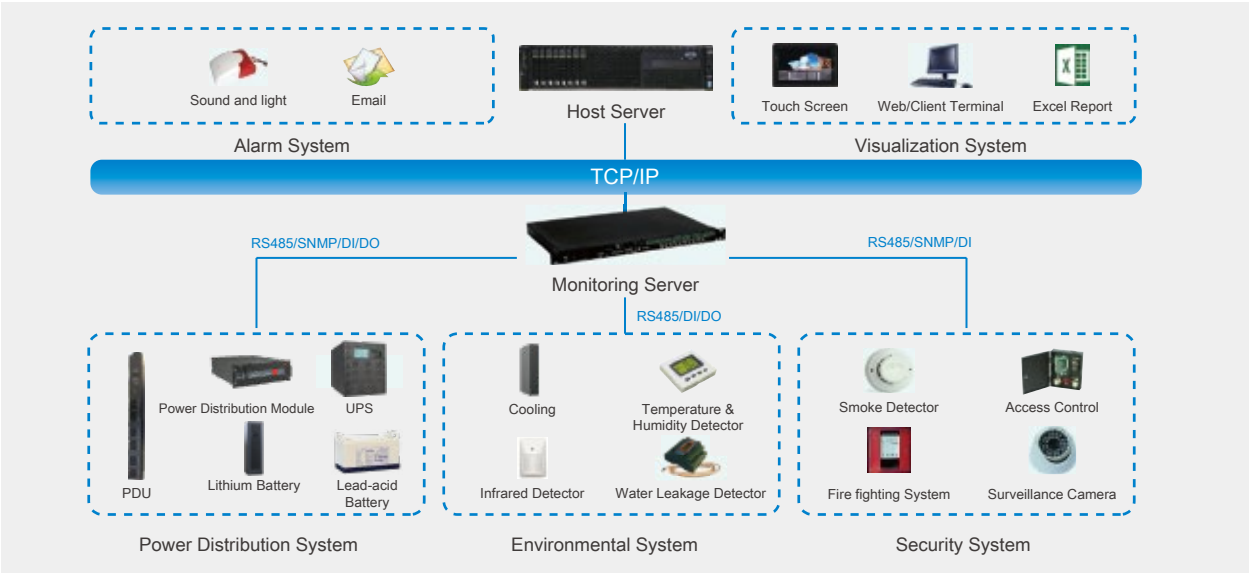
- Fully enclosed structure, sealed hot and cold aisles, improving cooling usage, reducing consumption and saving energy
- Using high-efficiency power modular, the UPS system efficiency is up to 97%
- Self-developed row precision cooling with double EC fans and electronic expansion valve and variable frequency driver, more energy-saving

Sealed hot and cold aisles, greatly reduce the cooling loss of cooling, decrease the PUE value.



Intelligent Management

- The centralized monitoring system monitors the status of running, the mains,the ambient temperature, etc
- Support various alarms, including audible & visual alarms, telephone, email, etc
- Using the remote monitoring platform to realize unattended operation and minimize the operation and maintenance costs



Safety and Reliability

- Fully enclosed design and compliance with IP55, apply to various working conditions
- Redundancy design of key equipment to ensure the system running stably
- With multi-level automatic alarm function, providing voice alarm, telephone voice alarm, network video surveillance, etc
- Built-in automatic fire alarm and fire extinguishing device to prevent and control fire in time

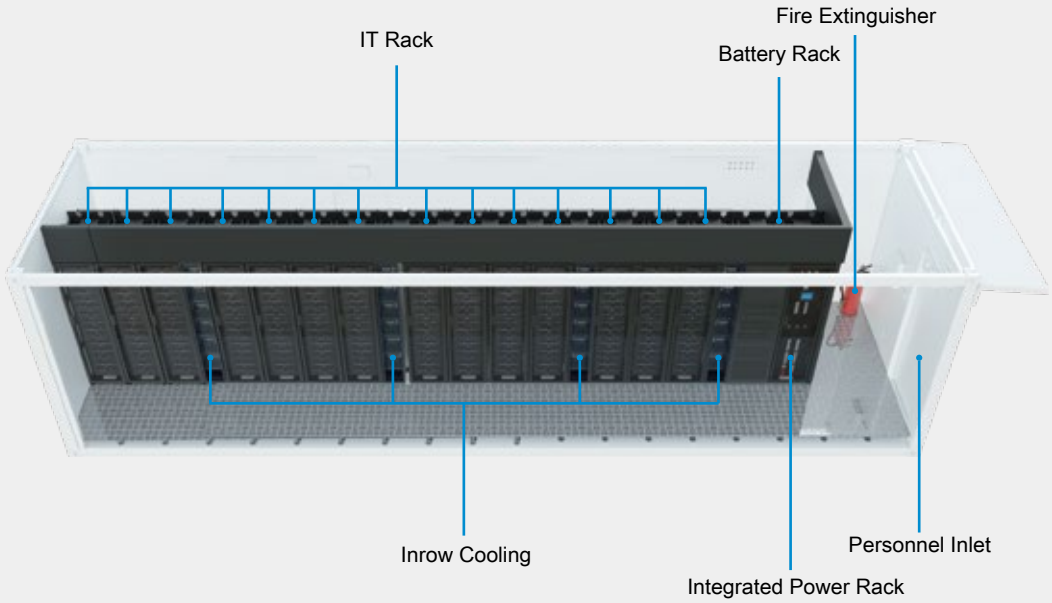
Deployed with comprehensive security system, including access control, video surveillance, fire extinguishing, automatic alarm, etc.

Technical Parameters

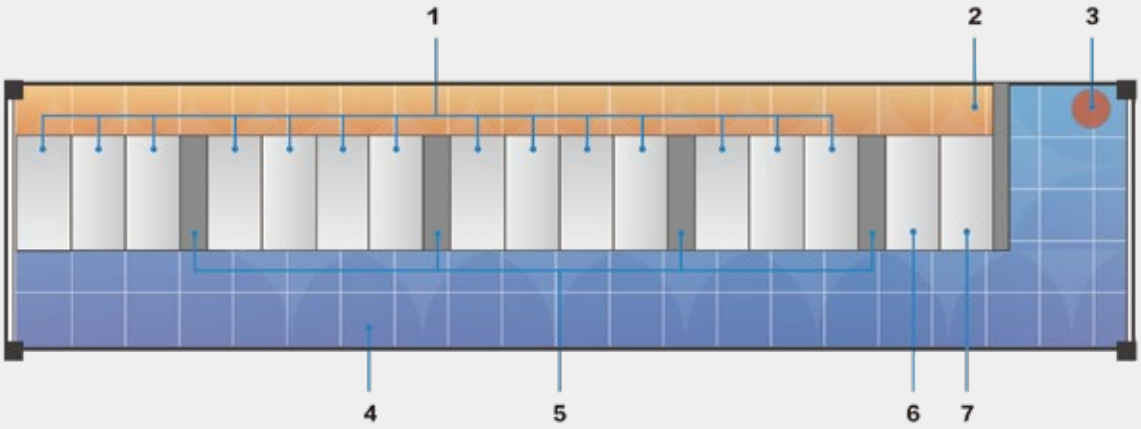
Recommended Solutions	Solution 1 (40ft)	Solution 2 (40ft)	Solution 3 (20ft)
Rack System			
Rack Dimension (W×D×H)mm	600×1100×2000	600×1100×2000	600×1100×2000
Rack Quantity (pcs)	14	10	5
Max Power per Rack (kW)	6	7	6
Total Power (kW)	84	70	30
Power Distribution System			
Power Supply System	Dual 400A Input/ATS (Optional); 380/400/415V, 50/60Hz, 3Ph+N+PE; Input lightning protection: 8/20us, In=20kA, Imax=40kA	Dual 320A Input/ATS (Optional); 380/400/415V, 50/60Hz, 3Ph+N+PE; Input lightning protection: 8/20us, In=20kA, Imax=40kA	Dual 125A Input/ATS(Optional); 380/400/415V, 50/60Hz, 3Ph+N+PE; Input lightning protection: 8/20us, In=20kA, Imax=40kA
UPS System	150kVA, N+1 module redundancy	120kVA, N+1 module redundancy	60kVA, N+1 module redundancy
Battery System	Battery rack: 1pcs Battery: 6-FM-120×36pcs Backup time: 10mins	Battery rack: 1pcs Battery: 6-FM-120×36pcs Backup time: 12mins	Battery rack: 1pcs Battery: 6-FM-65×34pcs Backup time: 15mins
Cooling System			
Cooling Type	In-row Inrow cooling cooling, 3+1 redundancy	Inrow cooling, 3+1 redundancy	Inrow cooling, 1+1 redundancy
Cooling Capacity	30kW for each, total 120kW	25kW for each, total 100kW	30kW for each, total 60kW
Sealed Aisle	Sealed Hot/Cold Aisle		
Monitoring System			
Monitoring Management	Centralized monitoring which includes UPS/CRAC/Power Distribution/CCTV/Access Control/Fire-fighting; Support audible & visual alarms and email alarm		
CCTV System	Supporting 4 or more HD cameras		
Access System	Three-in-one access control system (Card + Password+Fingerprint) and face recognition (Optional)		
Display System	Support local touch screen (10/21 inch), Web		
Fire Extinguishing System			
Fire Extinguishing	Automatic fire extinguishing system with audible & visual alarms, release the gas via fire linkage automatically		
Fire Extinguishing	FM200/NOVEC1230 (Optional)		
Structural System			
Container Size (H×W×L)mm	2896×3100×12192 (40ft)	2896×3100×12192 (40ft)	2896×3100×6058 (20ft)
Container Weight (kg)	14000 (Without racks)	14000 (Without racks)	7500 (Without racks)
Aisle Width (mm)	Cold aisle width: 1200; Hot aisle width: 600		
Protection	Waterproof, dustproof, mildew proof; Protection level: IP55		
Operating Environment			
Temperature (℃)	-40~50 (Below -20℃, low temperature kit and water pipe required)		
Altitude (m)	≤1000, derating above 1000m		

Solution 1

Internal



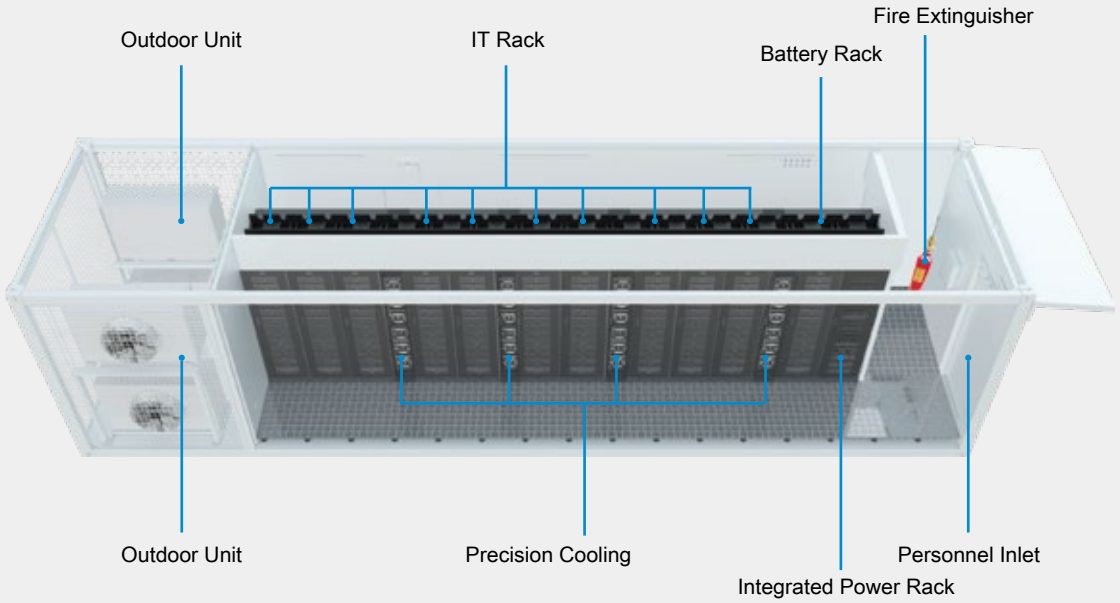
Top View



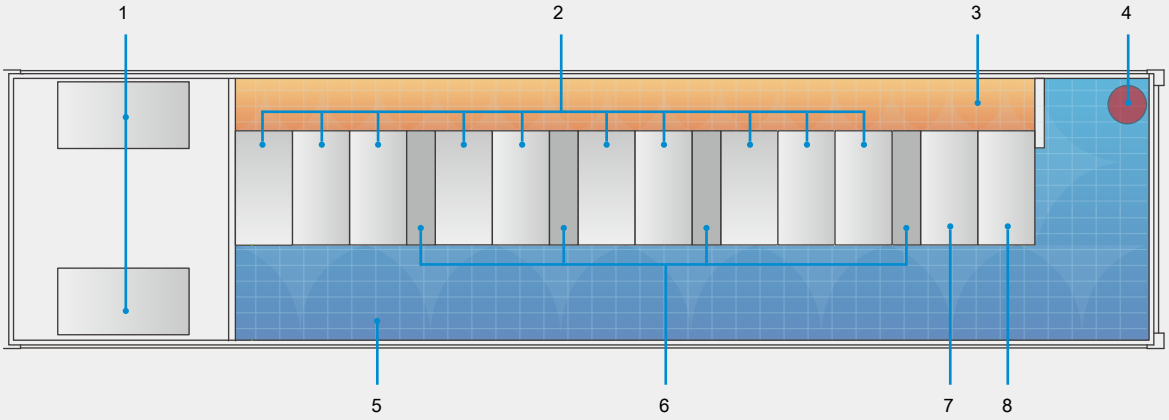
① IT Rack
② Sealed Hot Aisle
③ Fire Extinguisher
④ Sealed Cold Aisle
⑤ Precision Cooling
⑥ Battery Rack
⑦ Integrated Power Rack

Solution 2

Internal



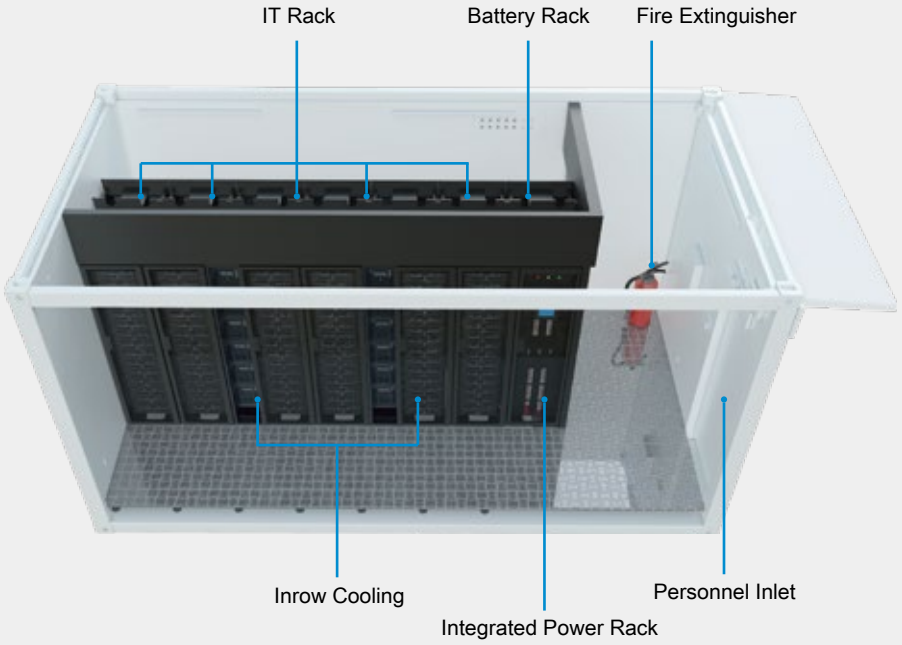
Top View



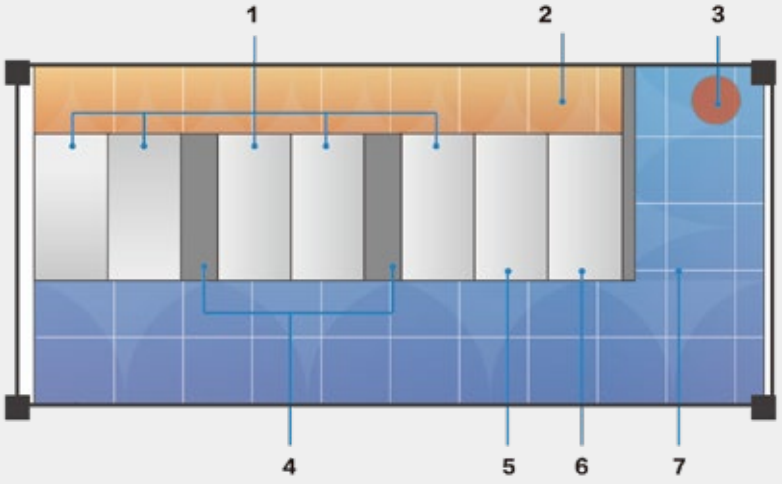
① Outdoor Unit
② IT Rack
③ Sealed Hot Aisle
④ Fire Extinguisher
⑤ Sealed Cold Aisle
⑥ Precision Cooling
⑦ Battery Rack
⑧ Integrated Power Rack

Solution 3

Internal



Top View



① IT Rack
② Sealed Hot Aisle
③ Fire Extinguisher
④ Inrow Cooling
⑤ Battery Rack
⑥ Integrated Power Rack
⑦ Sealed Cold Aisle

KSTAR
KSTAR

Product Introduction

KSTAR intelligent integrated outdoor unit (IOU in abbreviation) consists of UPS, battery, fire-fighting, power panel and monitor unit, it reserves available space for IT equipment. IOU has the features that it includes power redundancy, constant cooling, Li-ion battery design, this increases the reliability of IT equipment.

Front Side

Internal Layout

UPS

Battery

Cooling

Fire Fighting

Power Panel

Monitor

Application

Application	Installation Environment	Convenient Maintenance
IOU can be used in the cell station of the remote area.	Outdoor installation, waterproof, dustproof heat - resistant, steal-preventive	High reliable power supply, long backup time,maintenance free, integrated monitor.

Transformer-less UPS and Transformer-based UPS are Optional

- Rack-mounted 3kVA/6kVA transformer-less / transformer-based UPS, the UPS can work in parallel and realize 1+1.
- Wide input voltage range and frequency, it can ensure the stable running of the generator.
- Transformer-based UPS is with the features that it can anti-impulse current, and it also contain outout isolation transformer inside, that can increase the reliability and safety of power supply.

6kVA
Rack Mounted Tranformer-less UPS

3kVA
Rack Mounted Tranformer-based UPS

6kVA
Rack Mounted Tranformer-based UPS

Outdoor Battery Cabinet

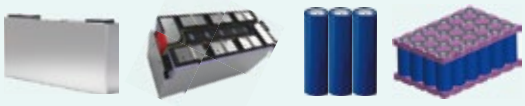
Patent Anti-leakage Tray

Optional BMS

KSTAR Li-ion battery solution, it adopt KSTAR Li-ion battery cabinet, it's with the below features:

- High power density (Light weight and small dimension)
- Heat-resistant (Working temperature can be up to 45℃)
- Long life, environment friendly (Cycle life of cell of Lithium iron phosphate is from 2000-6000, it's 4 to 5 times of lead acid battery)
- It includes self-developed battery management system(BMS), it's with good compatibility and make the product more reliable.
- Maintenance free (Reduce the maintenance cost).
- Environment friendly and don't contain polluted metal such as lead.

Rack Mounted Lithium Battery Pack

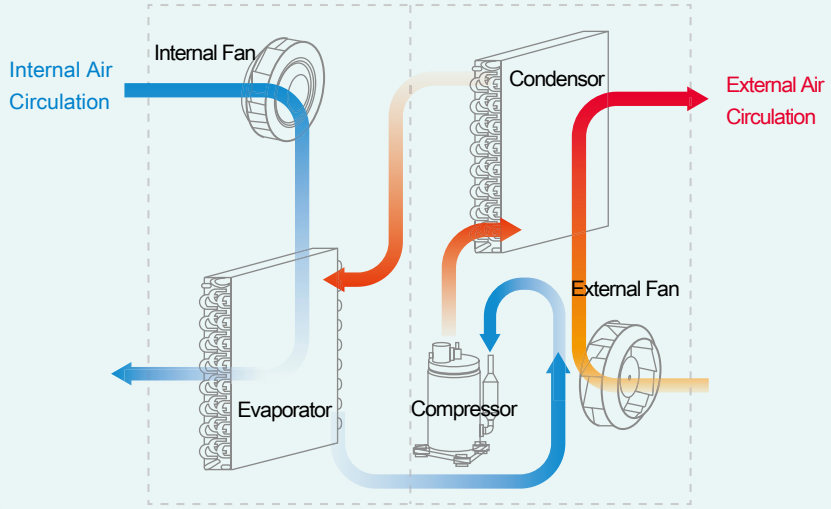


Lithium Battery / Pack

Cabinet Cooling

- It's embedded in the door of IOU, it don't occupy the acailable space, and increase the available soace for IT equipment.
- Single cabinet can be equipped with 1 or 2 air conditioner, the 2 air conditioner work as 1+1 redundancy, if one fails, the other can still work instead of the fault one immediately.
- AC/DC frequency conversion types air conditioners are optional. For 48Vdc freqiency conversion type, low start cyrrent, and it is feed by UPS and will not affect by public grid.
- Working temperature range: -40~55℃, wide temperature range for working.

Appearance of Cabinet Cooling



System Structure Chart

Rack Mounted Fire Fighting

- It is special for data center, it's with FM200 suppression gas inside.
- Integrated with fire detection and fire extinguisher together.
- When it is working, it will release all the gas within 10 sec and put out the fire inside the cabinet immediately.
- Automatically temperature monitor, and it can set different alarm temperature.

Rack Mounted Power Panel Module

- Rack mounted design.
- Customer can choose 2 paths design, one is for public gird, the other is for generator, fast connector for generator.
- Schneider brand breakers are standard equipment in the power panel module.
- C level surge protection for main input.
- Power monitor for the main input.

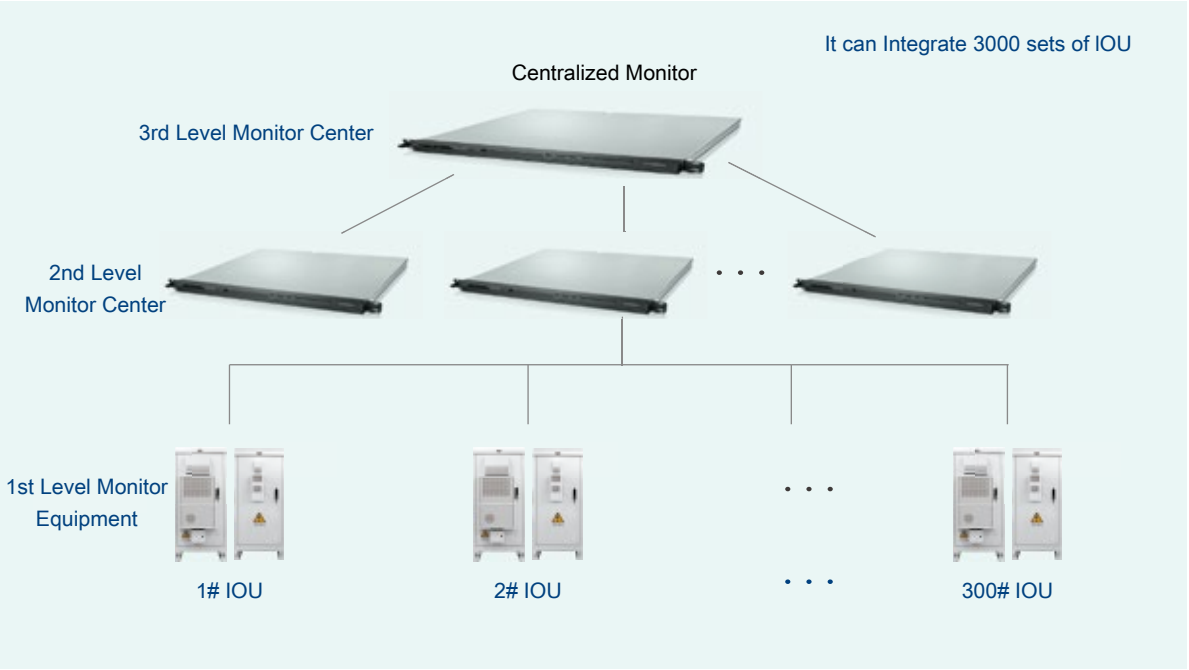
Intelligent Monitor System

Monitor Unit

- Power supply: dual power input, automatic transfer between two path when power failure.
- Large equipment access: 1 unit can integrated 50 equipment at most.
- Multi-level monitor: Multi-level integration can confirm the exactly quantity of IT equipment.
- Wifi hotspot: It support Wifi hotspot and can realized movable operation and maintenance.
- Easy to expand: Reserve slot, it can expand IO port, switch card and telephone audible card.

Monitor Software

- Software configuration: Customized sofware interface, no need to modify software code.
- Flexible : Support B/S and C/S browsing.
- Good compatibility: Compatible with the intelligent equipment from different supplier (UPS, cooling), support series port communication, SNMP, MODBUS TCP.
- Friendly communication interface: Monitor system can supply Northbound Interface free the third part can integrate monitor system through SNMP and Web Service.



Cabinet of IOU

- IP55
- Sandwich panels (Color steel plate + Polystupid ethylene heat-insulationg material).
- Heat insulationg material, the depth is 45mm.

Case Presentation

Cases Show

Malaysian Prime Minister's Department Data Center

An Enterprise Data Center in Singapore

Container Data Center in Nigeria

A Data Center in Jiangyou, Sichuan Province

An Enterprise Data Center in Shaanxi Province

An Enterprise Data Center in Gansu Province

Sustainability Commitment

Pollutant Discharge Permit (2016)

Authoritative System Certification

Product Certification

1.5 million kW/h

Annual output of photovoltaic power generation system

4.76 kg/a.

Total lead emission reduction of lead fume purification system

96.3%

Reuse rate of production water

Success Story

Beijing New Airport Eastern Airlines Base Project

State Grid Project

Core Data Center Project for a Major State-owned Bank's Headquarters

China Unicom Cloud Data Center Project

Success Story

JD Group Data Center UPS Project

Guangxi Medical University Second Affiliated Hospital Project

BYD Shenzhen&Shantou Plant 1 UPS Power Distribution Project

KL LRT/MRT Project, Malaysia

Our Solution

UPS Solution
Transformer-less
Memopower Series
1~40kVA

UPS Solution
Transformer-less
HPM3300E Series
30~1200kVA

UPS Solution
Robust Transformer-based
UPS Series
1~800kVA

Precision Cooling Series
5~300kW

Data Center Integrated Solution
IDU/IDM/IDB/IOU Series

Battery Series

UPS Solution
Line Interactive UPS Series
400~3000VA

UPS Solution
Transformer-less
YDC3300 Series
10~200kVA

UPS Solution
Transformer-less UL
Products Series
1~100kVA

KSTAR

Kstar

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