

U-position Asset Intelligent Management System

The system can achieve functions such as U-position space and status monitoring, cabinet temperature and humidity environment monitoring, real-time asset tracking, millisecond-level automatic inventory of assets, and full life cycle management of assets. This system can completely solve the problem of U-position IT asset management for enterprises and achieve intelligent management of assets and space.

Industry status quo



Difficult in positioning

Where is the faulty device?
Which server corresponds to the logical



Difficult to query status

Is the equipment in production or out of service?



Difficult in security supervision

The physical safety management of IT equipment is extensive.



Inventory difficult

What is the actual number of assets?
Does the account match the actual situation.



Difficulty in Planning

Where should this server be racked? Is there enough rack space?



Serious Space Fragmentation

Disorderly placement of assets leads to waste of U-position space and lack of effective supervision.

Compact Size

The width dimension of the asset strip is compact, and it can be applied to various types of cabinets.

Easy to install

Strong magnetic adsorption installation for easy setup.



System Features Introduction

- The system consists of U-space management host, U-space detection interface module, asset strip, U-space electronic label, label reader, switching power supply module, and other devices.
- The system enables space and status monitoring of U-space, temperature and humidity monitoring of cabinets, real-time asset tracking, millisecond-level automatic asset inventory, and full lifecycle asset management.
- The system provides Modbus RTU and HTTP northbound interfaces for seamless integration with third-party platforms.
- The height of the asset strip U-space is configurable with various specifications to adapt to cabinets of different heights.
- Each U-space indicator supports 4 states: Normal, Abnormal, Reserved 1, and Reserved 2, accommodating various business scenarios.
- The system provides up to 3 temperature and humidity monitoring points per cabinet (top and bottom), enabling environmental monitoring.
- The system supports QR code scanning to retrieve asset IDs, facilitating mobile terminal applications for customers.
- The system supports label readers to retrieve asset IDs, facilitating PC desktop applications for customers.

System Function

Asset Automatic Identification
U-position Space and Status Monitoring
Cabinet Temperature and Humidity Monitoring

Management Empowerment

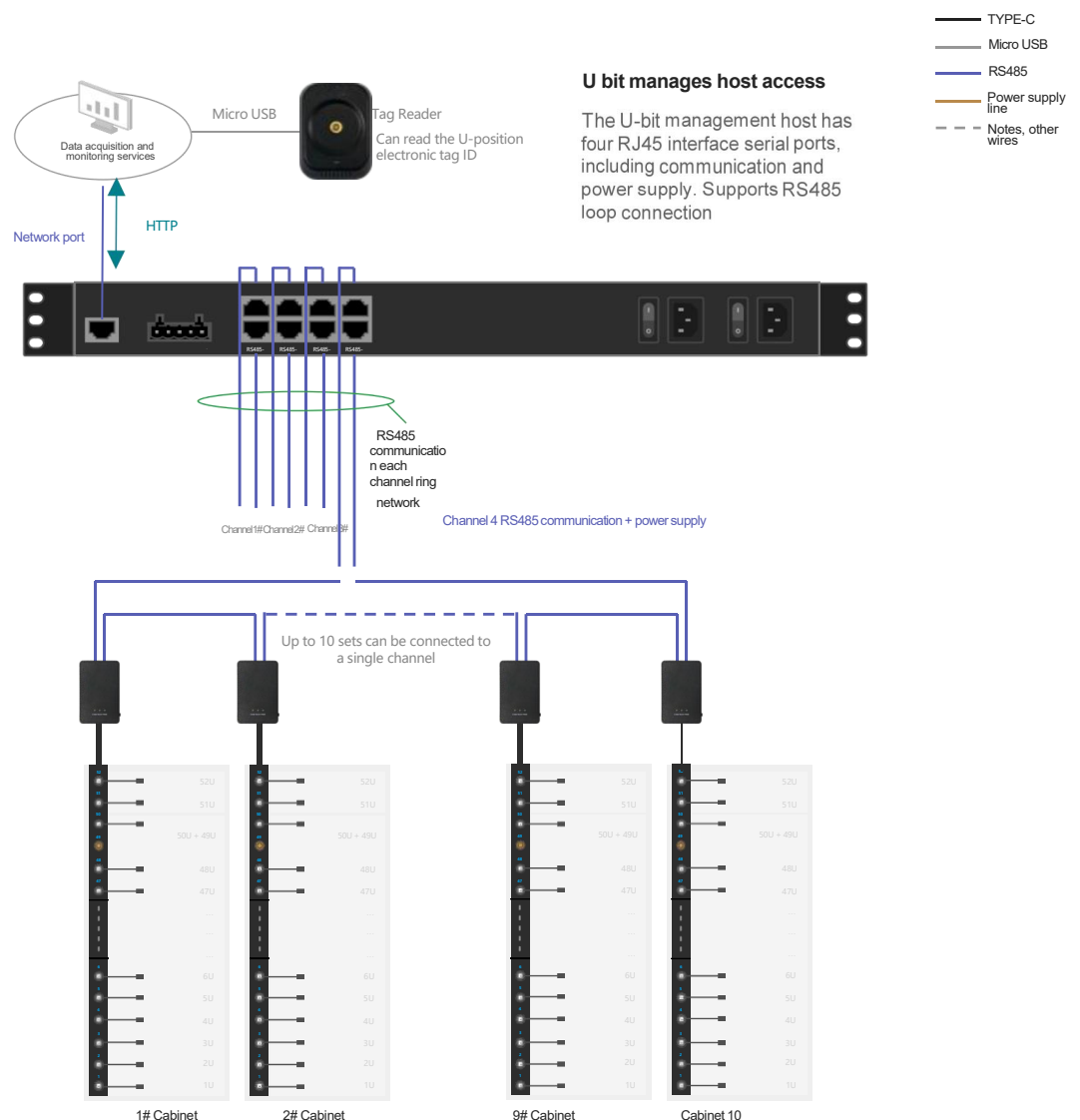
Real-time Asset Tracking
Millisecond-level Automatic Asset Inventory
Full-life-cycle Asset Management
U-position Space and Status Management
Cabinet Environment Monitoring

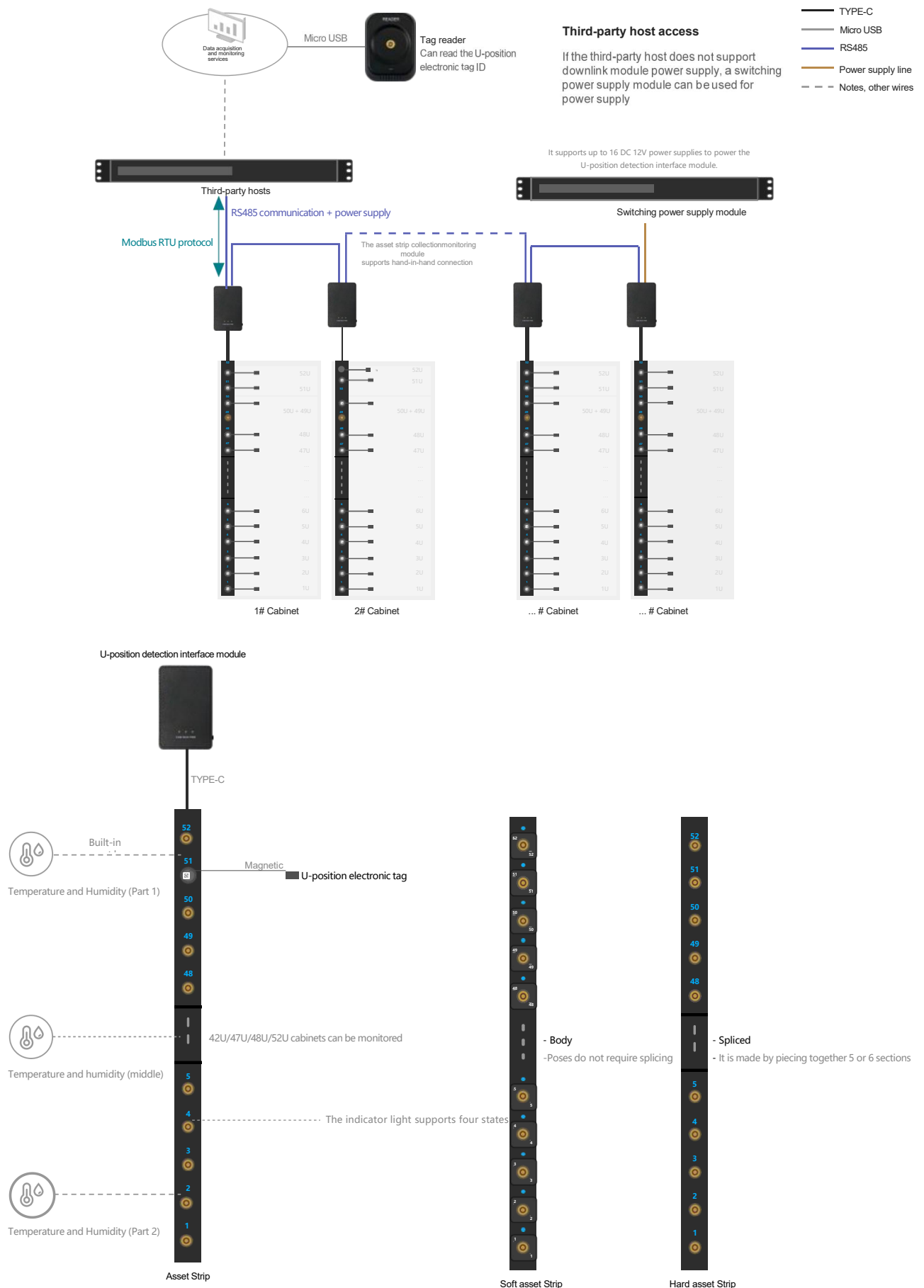


Product Composition

 U-position management host Data aggregation, management, upload	 U-position detection interface module Asset strip data collection, upload, and U-position status control
 Asset strips Cabinet U-position data collection, on-site status display, monitoring of cabinet temperature and humidity	 U-position electronic tags An 8-byte length ID can be obtained by scanning a QR code
 Tag reader Can read the U-position electronic tag ID	 Switching power supply module Supports up to 16 DC 12V power outputs, powering the U-position detection interface module

System topology diagram





- 1 Millisecond - level identification, real - time tracking of asset status**
 Physically bind with assets through U - bit electronic tags to provide U - bit IDs for assets. It can realize millisecond - level identification of asset location/information and real - time tracking of asset status.
- 2 Small size, suitable for most cabinets**
 The size of the U - bit asset strip is 20 (W) * 8 (H) mm. The small and exquisite appearance design is suitable for various cabinets.
- 3 Tag contact - type design, stable and reliable signal**
 The tag adopts a contact - type design. Compared with wireless transmission solutions, contact - type tags are free from signal interference. Moreover, the contact points are treated with hard gold, not easy to oxidize, ensuring stable communication and high reliability.
- 4 Magnetic - attraction fixed, easy installation/maintenance**
 Assets, U - bit detection interface modules and other equipment all adopt magnetic - attraction installation design, making installation and maintenance convenient.
- 5 Convenient installation**
 The flexible asset strip adopts an integrated and bendable soft strip design, while the rigid asset strip can be quickly assembled. Both types of asset strips adopt a strong magnetic - attraction installation design, enabling convenient installation.
- 6 Easy connection to third - party platforms**
 The system provides two third - party platform connection solutions:
 1. Use the HTTP northbound interface of the U - bit management host.
 2. Use the Modbus RTU protocol interface of the U - bit detection interface module.
- 7 Convenient configuration**
 The U - bit management host provides a Web configuration platform, supporting remote and online configuration. Moreover, the Web can set access IP whitelists to ensure system security.
- 8 Support for AC/DC power supply**
 Supports dual - power supply of AC and DC, and supports wide - voltage input.
- 9 Work in a wide temperature and humidity range**
 Working temperature: - 10°C ~ 50°C; Working humidity: 5% ~ 95% RH.
- 10 Improve space utilization**
 Through real - time monitoring and management of U - bits by the system, it can effectively optimize the space resource utilization of computer rooms.
- 11 Full - life - cycle management of assets**
 The system provides the function of real - time monitoring of asset changes and uploading, providing third - party platforms with full - life - cycle management capabilities of assets. It provides reliable data for recording asset statuses such as warehousing, ex - warehousing, migration, inventory, offline, maintenance, and even scrapping.
- 12 High - precision temperature and humidity monitoring**
 The system can be equipped with asset strips with temperature and humidity monitoring functions. Such asset strips are equipped with three temperature and humidity monitoring modules at upper, middle, and lower heights. The monitoring accuracy is $\pm 1^{\circ}\text{C}$ for temperature and $\pm 5\%$ for humidity.
- 13 Millisecond - level automatic startup of assets**
 The system provides millisecond - level automatic startup points for assets for third - party platforms. The startup points are time - saving, labor - saving, and accurate, effectively avoiding human errors.
- 14 Low power consumption**
 The 47U rack - mounted U - bit electronic tag has a current of about 125mA. The extremely low power consumption facilitates unified power supply with equipment pull - hand straps.

Order Information

Product model comparison

	U-bit manage the host Functions: Data aggregation, management, upload Selection: Select based on the amount of asset strip access	<table><tr><th>Model</th><th>Maximum access for asset bars</th><th>Size (mm)</th></tr><tr><td>DDCU04-A01</td><td>40</td><td>481*244*44.5</td></tr><tr><td>DDCU04-A02</td><td>8</td><td>105 * 75 * 30</td></tr></table>	Model	Maximum access for asset bars	Size (mm)	DDCU04-A01	40	481*244*44.5	DDCU04-A02	8	105 * 75 * 30																															
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	U-position detection interface module Function: Asset bar data collection, upload, U-position TMMR01-A01 State control Selection: 1 per asset bar																																									
	Asset Strip Functions: Cabinet U-position data collection, on-site status display, monitoring of temperature and humidity in a single cabinet Selection: 42U / 47U / 48U / 52U is available, with 1 per cabinet as standard	<table><tr><th>Model</th><th>Temperature and humidity</th><th>Material</th><th>One-piece/spliced</th><th>U-position unit size (mm)</th></tr><tr><td>DUCU (U-bit number) -B01</td><td>No</td><td>Soft version</td><td>- Body</td><td>20 * 46.2 * 8</td></tr><tr><td>DUHU (U-digit) -B01</td><td></td><td></td><td></td><td></td></tr><tr><td>DUCU (U-digit number) -B02</td><td>Top, middle and bottom 3</td><td>Soft version</td><td>- Body</td><td>20 * 46.2 * 8</td></tr><tr><td>DUHU (U-digit) -B02</td><td></td><td></td><td></td><td></td></tr><tr><td>DUHU (U-digit) -C01</td><td>No</td><td>Soft version</td><td>- Body</td><td>20 * 44.5 * 8</td></tr><tr><td></td><td>Top, middle and bottom 3</td><td>Soft version</td><td>- Body</td><td>20 * 44.5 * 8</td></tr><tr><td></td><td>Top, middle and bottom 3</td><td>Hard version</td><td>Splicing</td><td>20 * 44.5 * 8</td></tr></table>	Model	Temperature and humidity	Material	One-piece/spliced	U-position unit size (mm)	DUCU (U-bit number) -B01	No	Soft version	- Body	20 * 46.2 * 8	DUHU (U-digit) -B01					DUCU (U-digit number) -B02	Top, middle and bottom 3	Soft version	- Body	20 * 46.2 * 8	DUHU (U-digit) -B02					DUHU (U-digit) -C01	No	Soft version	- Body	20 * 44.5 * 8		Top, middle and bottom 3	Soft version	- Body	20 * 44.5 * 8		Top, middle and bottom 3	Hard version	Splicing	20 * 44.5 * 8
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	U-position electronic tag Function: Provide U-position ID for assets, automatically identify asset location, and track asset status in real time Selection: 1 standard for each asset	LUCU01-B01																																								
	Tag reader Function: Read the ID of the U-bit electronic tag Selection: Select 1 for each ID reading point	01RSCD-A01																																								
	Switching power supply module Function: Supports up to 16 DC 12V power outputs Selection: Choose according to power supply requirements	PSU16-A01																																								

U-position data collector

S80-A3-DDCU04-A01



For scenarios requiring online monitoring of cabinet U-spaces in data centers, enterprise computer rooms, etc., it is used for U-space data aggregation, management, and upload.

- **Serial port supports loop connection**

Each serial port can connect up to 10 asset strips, and each host can connect up to 40 asset strips

- **Easy integration with third parties**

Provides an HTTP northbound interface for easy integration with third parties

- **WEB configuration**

Support Web configuration, support whitelist management

Technical Data

Basic information	Processor	ARM9	Operating System	RTOS
	Design lifetime	> 10 years		
Communications	Uplink network interface	1, 100M, HTTP communication protocol	Downlink serial ports	4 serial ports, RJ45 interface form, including connect
	Access the asset strip	Each serial port can connect up to 10 asset strips, and each host can connect up to 40 asset strips		
	Accuracy	100%	Response time	< 1000ms
	Data real-time	< 2000ms	MTBF	More than 50,000 hours
	MTTR	< 0.5 hours		
Power supply	Power input	Two channels, supporting both AC and DC power supply. Ac power supply: 100-240V DC power: 140 to 330V	Overcurrent protection	Power supply: 250mA 485 signal: 200mA 485 power supply: 3A
	Overvoltage protection	485 signal: 5V	Lightning protection	Network: 6 million Serial port: 600W
	Power consumption	Less than 10W, excluding power for external supply		
Working environment	Operating temperature	- 10 ~ 50 °C	Operating humidity	5 to 95%, no condensation
Size	Size	481 mm * 244 mm * 44.5 mm		



U-position data collector

S80-A3-DDCU04-A02

In scenarios such as data centers and enterprise computer rooms that require online monitoring of cabinet U positions, it is used for U - position data summarization, management and uploading.

- **WEB configuration**

Supports Web configuration and whitelist management

- **Easy integration with third parties**

Provides an HTTP northbound interface for easy integration with third parties

Technical Data

Basic Information	Processor	ARM9	Operating System RTOS	
	Design lifetime	> 10 years		
Communications	Uplink network interface	1, 100M, HTTP communication protocol	Downlink serial port has 4 serial ports, in the form of RJ45 interface, including through Communication and power supply.	
	Access Strip	Each serial port can connect up to 4 asset strips, and each host can connect up to 8 asset strips		
	Accuracy	100%	Response time	< 1000ms
	Data real-time	< 2000ms	MTBF	More than 50,000 hours
	MTTR	< 0.5 hours		
	Asset			
Power supply	Power input	DC9~16V	Overvoltage protection	485 signal: 5V
	Overcurrent protection	Power supply: 250mA 485 signal: 200mA 485 power supply: 3A	Lightning protection	Network: 600W Serial port: 600W
	Power consumption	Less than 10W, excluding power for external supply		
Working environment	Operating temperature	- 10 ~ 50 °C	Operating humidity	5 to 95%, no condensation
	Size	105mm(L)*75mm(W)*30mm(H)		



U-position detection interface module

S80-A3-TMMR01-A01

For scenarios such as data centers and enterprise computer rooms that require online monitoring of cabinet U - positions, it is used for asset strip data collection, uploading, and U - position status control.

- **Easy access to third parties**

The module supports interfacing with third parties via the Modbus RTU protocol.

- **Simple wiring**

It includes 2 RJ45 interfaces, supports multiple module hand-in-hand series connection, and the ports contain communication and power supply, making wiring simple

Technical Data

Basic Information	Managed U - position Quantity	40U - 52U
	Indicator Lights	1 each for system and communication indicators
	Fixed Type	Magnetic Attraction
Communication	Communication Ports	2 RJ45s
	Communication Protocol	Modbus RTU
	Asset Strip Connection	TYPE - C
Power Supply	Power Supply	DC12V
Working Environment	Operating Temperature	-10 - 50℃
	Operating Humidity	5 - 95%, No Condensation 5 - 95%
Dimensions	Dimensions	63*42.4*23mm



Asset Strip

S80-A3-DUCUxx-B01

In scenarios such as data centers and enterprise computer rooms that require online monitoring of cabinet U - positions, it is used for data collection of cabinet U - positions and on - site status display.

- **Compact in size, suitable for most cabinets**

The U-position asset strip is small in size and suitable for cabinets of all specifications

- **The contact ports are gold-plated to prevent oxidation**

The contact points are gold-plated, which can effectively prevent oxidation

Technical Data

Basic Information	Colour	Black	Fixed method	Magnetic attraction
	Label contact	Magnetic plus contact	Tag reading method	Two-wire system
	Indicator light	Each U - position has 1 blue - red dual - color light and can support 4 U - position statuses.	Flexibility	Variable curvature
Communications	Uplink serial port	1 TYPE-C interface	Accuracy	100%
	Communication Protocol	Communicate with the U-position detection interface module via RS485		
	MTTR	< 0.5 hours	MTBF	More than 50,000 hours
Power supply	Power	DC12V, powered by the interface module		
Working environment	Operating temperature	- 10 ~ 50 °C	Operating humidity	5 to 95%, no condensation
	Size	46.2mm*20mm*8mm (per U position)		
Selection	DUHU52-B02	One 52U cabinet can be monitored		
	DUHU48-B02	One 48U cabinet can be monitored		
	DUHU47-B02	It can monitor one 47U cabinet		
	DUHU42-B02	One 42U cabinet can be monitored		



Asset Strip

S80-A3-DUCUxx-B02

In scenarios such as data centers and enterprise computer rooms that require online monitoring of cabinet U - positions, it is used for data collection of cabinet U - positions and on - site status display.

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	Indicator light	Each U - position has 1 blue - red dual - color light and can support 4 U - position statuses.	Flexibility	Variable curvature
Communications	Uplink serial port	1 TYPE-C interface	Accuracy	100%
	Communication Protocol	Communicate with the U-position detection interface module via RS485		
	MTTR	< 0.5 hours	MTBF	More than 50,000 hours
Power supply	Power	DC12V, powered by the interface module		
Working environment	Operating temperature	- 10 ~ 50 °C	Operating humidity	5 to 95%, no condensation
Size	Size	44.5mm*20mm*8mm (per U position)		
Selection	DUHU52-B02	One 52U cabinet can be monitored		
	DUHU48-B02	One 48U cabinet can be monitored		
	DUHU47-B02	It can monitor one 47U cabinet		
	DUHU42-B02	One 42U cabinet can be monitored		



Asset Strip

S80-A3-DUHUxx-B01

In scenarios such as data centers and enterprise computer rooms that require online monitoring of cabinet U - positions, it is used for data collection of cabinet U - positions and on - site status display.

- **Compact in size, suitable for most cabinets**

The U-position asset strip is small in size and suitable for cabinets of all specifications

- **High-precision temperature and humidity monitoring**

Supports high-precision temperature and humidity monitoring for three channels: upper, middle and lower

- **The contact ports are gold-plated to prevent oxidation**

The contact points are gold-plated to effectively prevent oxidation

Technical Data

Basic Information	Colour	Black	Fixed method	Magnetic attraction
	Label contact	Magnetic plus contact	Tag reading method	Two-wire system
	Indicator light	Each U - position has 1 blue - red dual - color light and can support 4 U - position statuses.	Flexibility	Variable curvature
Communications	Uplink serial port	1 TYPE-C interface	Accuracy	100%
	Communication Protocol	Communicate with the U-position detection interface module via RS485		
	MTTR	< 0.5 hours	MTBF	More than 50,000 hours
Temperature and humidity monitoring	Temperature range	- 10 °C to 50 °C	Humidity range	5% to 95%
	Precision	Temperature: ±1°C Humidity: ±5%	Module Position	Integrated into the asset bar, 3 temperature and humidity monitoring modules
Power supply	Power	DC12V, powered by the interface module		
Working environment	Operating temperature	- 10 ~ 50 °C	Operating humidity	5 to 95%, no condensation
Size	Size	46.2mm*20mm*8mm (per U position)		
Selection	DUHU52-B02	One 52U cabinet can be monitored		
	DUHU48-B02	One 48U cabinet can be monitored		
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	DUHU42-B02	One 42U cabinet can be monitored		



Asset Strip

S80-A3-DUHUxx-B02

In scenarios such as data centers and enterprise computer rooms that require online monitoring of cabinet U - positions, it is used for data collection of cabinet U - positions and on - site status display.

- **Compact in size, suitable for most cabinets**

The U-position asset strip is small in size and suitable for cabinets of all specifications

- **High-precision temperature and humidity monitoring**

Support high-precision temperature and humidity monitoring for three channels: upper, middle and lower

- **The contact ports are gold-plated to prevent oxidation**

The contact points are gold-plated to effectively prevent oxidation

Technical Data

Basic Information	Colour	Black	Fixed method	Magnetic attraction
	Label contact	Magnetic plus contact	Tag reading method	Two-wire system
	Indicator light	Each U - position has 1 blue - red dual - color light and can support 4 U - position statuses.	Flexibility	Variable curvature
Communications	Uplink serial port	1 TYPE-C interface	Accuracy	100%
	Communication Protocol	Communicate with the U-position detection interface module via RS485		
	MTTR	< 0.5 hours	MTBF	More than 50,000 hours
Temperature and humidity monitoring	Temperature range	- 10 °C to 50 °C	Humidity range	5% to 95%
	Precision	Temperature: ±1°C Humidity: ±5%	Module Position	Integrated into the asset bar, 3 temperature and humidity monitoring modules
Power supply	Power	DC12V, powered by the interface module		
Working environment	Operating temperature	- 10 ~ 50 °C	Operating humidity	5 to 95%, no condensation
Size	Size	44.5mm*20mm*8mm (per U position)		
Selection	DUHU52-B02	One 52U cabinet can be monitored		
	DUHU48-B02	One 48U cabinet can be monitored		
	DUHU47-B02	It can monitor one 47U cabinet		
	DUHU42-B02	One 42U cabinet can be monitored		



Asset Strip

S80-A3-DUHUxx-C01

In scenarios such as data centers and enterprise computer rooms that require online monitoring of cabinet U - positions, it is used for data collection of cabinet U - positions and on - site status display.

- **Compact in size, suitable for most cabinets**

The U-position asset strip is small in size and suitable for cabinets of all specifications

- **High-precision temperature and humidity monitoring**

Support high-precision temperature and humidity monitoring for three channels: upper, middle and lower

- **The contact ports are gold-plated to prevent oxidation**

The contact points are gold-plated to effectively prevent oxidation

Technical Data

Basic Information	Colour	Black	Fixing method	Magnetic attraction
	Label contact	Magnetic attraction plus Contact	Tag reading method	Two-wire system
	Indicator light	1 blue light per U-position, supporting 4 U-position states		
Communications	Uplink serial port	1 TYPE-C interface	Accuracy	100%
	Communication Protocol	Communicate with the U-position detection interface module via RS485		
	MTTR	< 0.5 hours	MTBF	More than 50,000 hours
Temperature and humidity monitoring	Temperature range	- 10 °C to 50 °C	Humidity range	5% to 95%
	Precision	Temperature: ±1°C Humidity: ±5%	Module Position	Integrated into the asset bar, 3 temperature and humidity monitoring modules
	Power	DC12V, powered by the interface module		
Power supply	Operating temperature	- 10 ~ 50 °C	Operating humidity	5 to 95%, no condensation
Working environment	Size	44.5mm*20mm*8mm (per U position)	Asset strip splicing	Supports splicing products with different U-position specifications through 5U/6U asset strips
Size	DUHU52-C01	One 52U cabinet can be monitored		
Selection	DUHU48-C01	One 48U cabinet can be monitored		
	DUHU47-C01	Can monitor 1 47U cabinet		
	DUHU42-C01	One 42U cabinet can be monitored		



U-position electronic tags

S80-A3-LUCU01-B01

For scenarios such as data centers and enterprise computer rooms that require online monitoring of cabinet U - positions, it provides U - position IDs for IT assets, identifies asset locations, and tracks asset statuses in real - time.

- **Stable and reliable signals**

The label uses a contact design. Compared with the wireless transmission scheme, the contact label signal is not affected by moisture or metal, and the signal is stable and reliable

- **The contact ports are gold-plated to prevent oxidation**

The contact points are gold-plated to effectively prevent oxidation

Technical Data

Basic Information

Reading Method

Two - wire System

Tag ID

8 bits, Read - only after Factory Shipment

Connection Method

Magnetic Attraction + Contact

Reading Method

Two - wire System

QR Code

10*10mm, Content is the ID of the Electronic Tag, Supporting QR Code Scanning to Obtain Asset ID

Installation Method

Asset Strip End: Magnetic Attraction; Asset End: Adhesive

Power Supply

Power Supply

3.3~5V

Working Environment

Operating Temperature

-10~50℃

Operating Humidity

5~95%, No Condensation 5~95%

Dimensions

Dimensions

Diameter 17mm, Thickness 8mm

Connection Rope

200mm, 400mm Optional



U-position tag reader

S80-A3-01RSCD-A01

Scenarios such as data centers and enterprise computer rooms that require online monitoring of cabinet U positions, which are used for reading U-position electronic tags.

- **The contact ports are gold-plated to prevent oxidation**
The contact points are gold-plated to effectively prevent oxidation

Technical Data

Basic information	Interface	Micro USB (the device comes with a Micro USB cable)	Size	50*68*18 (mm)
	Power supply	USB Power		
	Communications	Contact, two-wire		
Working environment	Operating temperature	- 10 ~ 50 °C	Operating humidity	5 to 95%, no condensation



Switching power supply module

S80-A3-PSU16-A01

In scenarios such as data centers and enterprise computer rooms that require online monitoring of cabinet U positions, 16 channels of DC12V power output are provided for power supply of U-position detection interface modules.

- **Port protection**
Each output port supports reverse connection protection

- **Easy to install**
1U rack-mounted design

Technical Data

Basic Information	Indicator Light	Each output has a working indicator light	Wiring method	The terminal is RJ45 form, and the wire sequence is defined to fit the U-position detection interface module wire sequence
Power supply	Power input	Supports 1 AC/DC power input	Power output	16 DC power supply outputs are available, with a total load capacity 12V@8A
	Power input range	100 to 240VAC/140 to 330VDC		
Size	Size	481mm*244mm*44.5mm		

