

# iDS6-P User's Manual

# Industrial 4 Port RS422/485 to 2 Port

# Ethernet Serial Device Server with PoE



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## FCC Statement and Cautions

#### Federal Communications Commission Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment cangenerate, use, and radiate radio frequency energy. If not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will at his/her own expense, be required to correct the interference.

#### Caution: Service

This product contains no user-serviceable parts. Attempted service by unauthorized personnel shall render all warranties null and void.

Changes or modifications not expressly approved by iS5 Communications Inc. could invalidate specifications, test results, and agency approvals, and void the user's authority to operate the equipment.

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#### Caution: Physical Access

This product should be installed in a restricted access location. Access should only be gained by qualified service personnel or users who have been instructed on the reasons for the restrictions applied at the location, and any precautions that havebeen taken. Access must only be via the use of a tool or lock and key, or other means of security, and is controlled by the authority responsible for the location.

# **Introduction**

#### 1.1 About the iDS6 Serial Device Server

The iDS6 series is an industrial grade serial server with 4 ports RS232/422/485 and 2 LAN ports with optional isolation form RS-422/485 serial ports and one P.O.E PD Ethernet port. Users are able to configure the iDS6 using a web browser via one of the LAN ports on the iDS6. The iDS6 series offers many powerful features for HW & SW redundant functions.

When the connection between master-link and LAN fails, if setup in Redundant mode the iDS6 can automatically switch to the other LAN port within 10m, and thus guarantee a non-stop connection. The iDS6 series also supports Switch mode, allowing users to Daisy Chain several serial servers to reduce the usage of Ethernet switch ports. Also, the iDS6 can simultaneously transfer data into 5 host PCs. This feature can assure all critical data is saved in different host PCs to avoid Ethernet break or host PCs failure.

Additionally, the iDS6 series provides dual redundant power inputs on a terminal block connection. The iDS6 series provides NAT pass through function so that users are able to manage iDS6 inside or outside the NAT router.

#### 1.2 Software Features

- Redundant Dual Ethernet Ports: Recovery time < 10ms.
- Switch Mode Supported: Daisy Chain support to reduce usage of switch ports.
- NAT-pass through: User can manage iDS6 through NAT router.
- Redundant multiple host devices: 5 simultaneous in Virtual COM, TCP Server, TCP Client mode, UDP.
- Secured Management by HTTPS and SSH.
- 🕈 🔹 Versatile Mode: Virtual Com, Serial Tunnel, TCP Server, TCP Client, UDP
- 🕈 🔹 Event Warning by Syslog, Email, SNMP trap, Relay and Beeper
- Various Windows O.S. supported: Windows NT/2000/ XP/ 2003/VISTA 32bits

#### 1.3 Hardware Features

- 2 x 10/100Base-T(X) Ethernet port
- 1 optional PoE PD port (IEEE 802.3af compliant)
- 9 4 x isolated serial port (DB9 or 5 pin terminal block)
- Dual Power Input low-voltage (LV) DC (10-48VDC)
- Dual Power Input medium-voltage (MV) DC (36-75VDC)
- Single Input Hi-voltage (HV) AC/DC input (85-264VAC, 880-300VDC) with Single (10-48VDC) backup
- Wide Operating Temperature: -40 to 85°C
- Storage Temperature: -40 to 85 °C
- Operating Humidity: 5% to 95%, non-condensing
- 🕈 Chassis: IP-40 Galvanized Steel
- Dimensions: 52 mm(W)x 106.1 mm( D )x 144.3 mm(H)

# Hardware Installation

## 2.1 Installing the Server on a DIN-Rail

Each server has a DIN-Rail bracket on the rear panel. The DIN-Rail bracket secures the server onto the DIN-Rail.

#### Mounting the iDS6 Series on a DIN-Rail

Step 1: Slant the server and hook the metal bracket on to the top of the DIN-Rail.



Step 2: Push the bottom of the server toward the DIN-Rail until the bracket snaps in place.



## 2.2 Panel or Wall Mount Installation

The server can also be panel or wall mounted. The following steps show how to mount the server on a panel or wall.

#### Mounting the iDS6 Series on a Panel or Wall

Option 1: Fix mounting brackets to the side of server using the 4 screws included in the package.



Option 2: Fix mounting brackets to the back of server using 4 screws included in the package.



Note: To avoid damage to the unit please use the screws provided to mount the panel mount brackets to the unit.

# Hardware Overview

#### 3.1 iDS6 Front Panel



#### iSD6 Front Panel illustration

iDS6 Front Panel Item Descriptions:

1. PoE and system status LED (optional).

- 2. PWR1 and system status LED.
- 3. PWR2 and system status LED.
- 4. Fault indicator LED.
- 5. Status LEDs for the 4 Serial ports.
- 6. 10/100Base-T(X) Ethernet port and Ethernet status LEDs.
- 7. 10/100Base-T(X) Ethernet port (optional PoE PD port) and Ethernet status LEDs.
- 8. 4x RS-232/422/485 serial ports.

#### 3.2 iDS6P Front Panel



iSD6P Front Panel illustration

iDS6P Front Panel Item Descriptions:

1. PoE and system status LED.

- 2. PWR1 and system status LED.
- 3. PWR2 and system status LED.
- 4. Fault indicator LED.
- 5. Status LEDs for the 4 Serial ports.
- 6. 10/100Base-T(X) Ethernet port and Ethernet status LEDs.
- 7. 10/100Base-T(X) Ethernet port (PoE PD port) and Ethernet status LEDs.
- 8. 4x RS-422/485 serial ports with 2KV isolation.

### 3.3 Front Panel LEDS

The following table describes the LED status for the iDS6/iDS6P.

LED	Color	Status	Description
<b>P.O.E</b>	Green / Red	On	Power supplied over Ethernet Cable
Optional)	Green / Keu	Red Blinking	Indicates and IP conflict, or DHCP or BOOTP server did not respond properly
DW/D4	Crean (Ded	On	AC/DC power 1 activated.
PWRI	Green/Red	Red blinking	Indicates an IP conflict, or DHCP or BOOTP server did not respond properly
214/22	Green/Red	On	DC power 2 activated.
PWKZ		Red blinking	Indicates an IP conflict, or DHCP or BOOTP server did not respond properly
Fault Red On		On	Fault event occurred.
S1 ~ SA	Green	Blinking	Serial port is transmitting data
51 54	Red	Blinking	Serial port is receiving data
ЕТЦ1	Green/Amber	Green On/Blinking	100Mbps LNK/ACT
	Green/Amber	Amber On/Blinking	10Mbps LNK/ACT
ЕТЦ 2	Green/Amber	Green On/Blinking	100Mbps LNK/ACT
1172	Green/Amper	Amber On/Blinking	10Mbps LNK/ACT

## 3.4 DB9 Serial Ports

DB9 Connector (iDS6)				
		6 7 8 9		
Pin #	RS 232	RS 422	RS 485 ( 4 wire )	RS 485 ( 2 wire )
1	DCD	RXD -	RXD -	
2	RXD	RXD +	RXD +	
3	TXD	TXD +	TXD +	DATA +
4	DTR	TXD -	TXD -	DATA -
5	GND	GND	GND	GND
6	DSR			
7	RTS			
8	CTS			
9	RI			
RS 232 mode will act as DTE				

#### 3.5 Terminal Block Serial Ports (5 Pin)

There are 4, 5 Pin Terminal Block serial ports on the front panel of iDS6P. The pin out is shown as below:

	• •		• •	•	
	1 2	;	34	5	
Din #	DC 422		RS	485	RS 485
F 111 #	K3 422		(4 v	vire )	( 2 wire )
1	GND		<b>(4 v</b> GND	vire )	<mark>(2 wire)</mark> GND
1 2	GND RXD -		<b>( 4 v</b> GND RXD -	vire )	<mark>(2 wire)</mark> GND
1 2 3	GND RXD - RXD +		<b>( 4 v</b> GND RXD - RXD +	vire )	(2 wire) GND
1 2 3 4	GND RXD - RXD + TXD -		<b>( 4 v</b> GND RXD - RXD + TXD -	vire )	(2 wire) GND DATA -

#### 5 Pin Terminal Block Connector (iDS6P)

#### 3.6 **Power Supply Connections**

The Phillips Screw Terminal Block, located on the bottom of the unit, has Phillips screws with compression plates, allowing either bare wire connections or crimped terminal lugs. The use of #6 size ring lugs is recommended to ensure secure and reliable connections under severe shock or vibration. The terminal block comes with a safety cover which must be removed before connecting any wires. This

cover must be re-attached after wiring to ensure personnel safety.

The iDS6 series supports dual redundant power supplies (PWR1 and PWR2). There are 3 options:

- 1. LV: Dual Input 10-48VDC
- 2. MV: Dual Input 36-75VDC
- 3. HV: Single Input 88-300VDC or 85-264VAC with a Single 10-48VDC backup.

There are also connections for the Failsafe Relay. Connections to the Terminal block are listed in the table below.



#### **Terminal Block**

Terminal Number	Description	Connection
1	PWR1 (L) – Live	Connect to the (Live) of DC power supply 1 or (Live) terminal of an AC power source.
2	PWR1 (G) – Ground	DC Power supply 1 ground connection or AC power round connection.
3	PWR1 (N) – Neutral	Connect to the Neutral of the DC power supply 1 or (Neutral) terminal of an AC power source.
4	G – Chassis Ground	Connected to the ground bus for DC inputs or Safety Ground terminal for AC Units. Chassis Ground connects to both power supply surge grounds via a removable jumper.
5	PWR2 (L) – Live	Connect to the (Live) terminal of Power supply 2 or backup DC power source for HV.
6	PWR2 (G) – Ground	Power supply 2 or backup DC power source ground connection.
7	PWR2 (N) – Neutral	Connect to the (Neutral) terminal of Power supply 2 the second or backup DC power source for HV.
8	RLY NO	Failsafe Relay, (Normally Open) contact.
9	RLY CM	Failsafe Relay (Common) contact.
10		No Connection

100-240VAC rated equipment: A 250VAC appropriately rated circuit breaker must be installed.

- Equipment must be installed according to the applicable country wiring codes.
- When equipped with a HI voltage power supply and DC backup,

88-300VDC rated equipment: A 300VDC appropriately rated circuit breaker must be installed.

- A circuit breaker is not required for DC power supply voltages of 10-48VDC.
  - For Dual DC power supplies, separate circuit breakers must be installed and separately identified.
- Equipment must be installed according to the applicable country wiring

#### 3.7 Chassis Ground Connection

The iDS6/iDS6P chassis ground connection, located next to the terminal block, uses a #6-32 Screw. We recommend terminating the ground connection using a #6 ring lug, and a torque setting of 15 in.lbs (1.7Nm).

# **Cables**

### 4.1 Ethernet Cables

The iDS6 series has standard Ethernet ports. According to the link type, the Device Server can use CAT 3, 4, 5,5e UTP cables to connect to any other network device (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

Cable	Туре	Max. Length	Connector
10BASE-T	Cat. 3, 4, 5 100-ohm	UTP 100 m (328 ft)	RJ-45
100BASE-TX	Cat. 5 100-ohm UTP	UTP 100 m (328 ft)	RJ-45

Cable Types and Specifications

#### 100BASE-TX/10BASE-T Pin Assignments

With 100BASE-TX/10BASE-T cable, pins 1 and 2 are used for transmitting data, and pins 3 and 6 are used for receiving data.

Pin Number	Assignment
1	TD+
2	TD-
3	RD+
4	PoE. power input +
5	PoE. power input +
6	RD-
7	PoE. power input -
8	PoE. power input -

RJ-45 Pin Assignments

The iDS6 Series supports auto MDI/MDI-X operation. You can use a straight- through cable to connect a PC to the iDS6. The following table below shows the 10BASE-T/ 100BASE-TX MDI and MDI-X port pin outs.

Pin Number	MDI port	MDI-X port
1	TD+(transmit)	RD+(receive)
2	TD-(transmit)	RD-(receive)
3	RD+(receive)	TD+(transmit)
4	Not used	PoE. power input +
5	Not used	PoE. power input +
6	RD-(receive)	TD-(transmit)
7	Not used	PoE. power input -
8	Not used	PoE. power input -

MDI /	MDI-X	pins	assignment	Ċ
-------	-------	------	------------	---

**Note:** "+" and "-" signs represent the polarity of the wires that make up each wire pair.

# Management Interface



Prior to upgrading the firmware, remove any physical loop connections. **DO NOT** power off the unit during a firmware upgrade.

## 5.1 Configuration by Web Browser

This section introduces the configuration by Web browser.

#### 5.1.1 About Web-based Management

An embedded HTML web site resides in the flash memory of the CPU board. It contains advanced management features which allow you to manage the Device server from anywhere on the network via a standard web browser such as Microsoft Internet Explorer.

The Web-Based Management function supports Internet Explorer 5.0 or later. It is based on Java Applets with an aim at reducing network bandwidth consumption and enhances access speed in a viewing screen.

**Note:** By default, IE5.0 or later versions do not allow Java Applets to open sockets. The browser settings need to be explicitly modified in order to enable Java Applets to use the network ports.

Preparing for Web Management The default values are below: IP Address: 192.168.10.2 Subnet Mask: 255.255.0 Default Gateway: 192.168.10.254 User Name: admin Password: admin

#### System Login

- 1. Launch Internet Explorer.
- 2. Type https:// and the switches IP address. Press "Enter".



3. When the following screen appears, select "Continue to this website".

€→	https://192.168.10.2/     P - C     Certificate Error: Navigation ×
8	There is a problem with this website's security certificate.
	The security certificate presented by this website was not issued by a trusted certificate authority. The security certificate presented by this website was issued for a different website's address.
	Security certificate problems may indicate an attempt to fool you or intercept any data you send to the server.
	We recommend that you close this webpage and do not continue to this website.
	Ø Click here to close this webpage.
	Continue to this website (not recommended).

4. The login screen appears.

ndows Security	
The server 192. Warning: This s sent in an insec connection).	168.10.2 at index.htm requires a username and password. erver is requesting that your username and password be ure manner (basic authentication without a secure
	admin       •••••       Remember my credentials
	OK Cancel

Login screen

5. Key in the username and password. The default username and password are "admin".

6. Press "Enter" or click the "OK" button. The main interface of the Web-based management appears.

← → € 192.168.10.2	Cert 🖹 🖒 🧔 Serial Device	Server ×
SSS COMMUNICATIONS Services - Support - Security - Solutions - Systems		
MENU	System Information	1
Serial Device Server	IP Address	192.168.10.2
🖲 System	MAC Address	E8-E8-75-00-00-02
Port Serial Setting	Firmware Version	1.0
Save/Reboot Help		

System Information

#### 5.1.2 System Setting

#### 5.1.2.1 System Information

Displays System Information of the Device Server.

System Information	
IP Address	192.168.10.2
MAC Address	E8-E8-75-00-00-02
Firmware Version	1.0

System Information interface

The following table describes the System Information interface page.

Label	Description
IP Address	Displays the IP address assigned to the Device Server.
MAC Address	Displays the unique hardware address (MAC) assigned by manufacturer.
<b>Firmware Version</b>	Displays the switch's firmware version.

#### 5.1.2.2 SNTP Configuration

The SNTP (Simple Network Time Protocol) settings allow the Device Server clock to be synchronized the Internet.

SNTP Configuration			
Name	DeviceServer-DEFAULT		
Time	Time		
SNTP	⊖ Enable		
Time Zone	(GMT+08:00)Taipei		
Local Time	Thu Jun 20 09:10:53 EDT 20		
Time Server	pool.ntp.org Port 123		
Console			
Telnet Console	● Enable ○ Disable		
Apply			

SNTP Configuration interface

The following table describes the SNTP Configuration interface page.

Label	Description	
Name	Sets the name of the Device Server.	
SNTP Client	Enables or disables the SNTP function to get the time from a SNTP server.	
Time zone	Sets the time zone based on the Device Server location. The table below	
	lists the different time zones for reference.	
Local Time	Displays the current time of the Device Server.	
Time Server	Input the SNTP server domain name or IP address and Port.	
Telnet Console	Enables or Disables the option to allow a Telnet Console (SSH)	
	connection. In some cases, you may need to disable this function to	
	prevent unauthorized access from internet. The factory default is Enable.	
Apply	Click "Apply" to activate the configurations.	

#### 5.1.2.3 IP Configuration

This screen allows the IP and Auto Report settings to be configured. A valid IP address should be assigned to the DS before adding it to an existing network. Your network administrator should provide you with the IP address and related settings. The IP address must be unique and within the network (otherwise, DS will not have a valid connection to the network). You can choose from three possible "IP configuration" modes: Static, DHCP/BOOTP, and PPPoE. The Factory Default is a static IP address and is "192.168.10.2"

IF	P Configuration	
	IP Configuration	Static V
	IP Address	192.168.10.2
	Netmask	255.255.255.0
	Gateway	192.168.10.1
	DNS Server 1	192.168.10.1
	DNS Server 2	
	Auto IP Report	
	Auto Report to IP	
	Auto Report to TCP Port	0
	Auto Report Interval	0 seconds
	Ethernet Mode	
	Ethernet Mode	● Redundant ○ Switch
	Apply	

#### IP Configuration interface

Label	Description
IP Configuration	Select from the following type of IP:
	🕈 Static
	♥ DHCP/BOOTP
	🕈 PPPoE
IP Address	Assign the IP address that the network is using. If DHCP client function is enabled, there is no need to assign an IP address. The network DHCP server will assign the IP address for the switch and it will be displayed in this column. The default IP address is 192.168.10.2.
Netmask	Set the subnet mask to communicate on the network. If the DHCP client function is enabled, a Netmask is not needed.
Gateway	Assign the network gateway for the switch. The default gateway is 192.168.10.254. If the DHCP client function is enabled, a Gateway is not needed.
DNS1	Assign the primary DNS IP address. If the DHCP client function is enabled, a DNS is not needed.
DNS2	Assign the secondary DNS IP address. If the DHCP client function is enabled, a DNS is not needed.
Auto Report to IP	The Device Server will report its status periodically. Enter the IP address where the report is to be sent.
Auto Report to	The Device Server will report its status periodically. Enter the TCP Port
TCP Port	where the report is to be sent.

#### The following table describes the labels in IP configuration interface page.

Auto Report	Set the report interval to the number of seconds between each
Interval	report. The default setting is 0 which indicates that the Auto Report is
	disabled.
Ethernet Mode	Select one of the two Ethernet Modes:
	Redundant:
	When the connection between master-link and LAN fails, the Device
	Server will automatically switch to another LAN port within 10mS, and
	still guarantees a non-stop connection.
	Switch:
	Daisy Chain support to reduce usage of switch ports.
Apply	Click "Apply" to activate the configurations.

## 5.1.2.4 DDNS Configuration

The Dynamic DNS service allows you to alias a dynamic IP address to a static hostname, allowing your computer to be more easily accessed from various locations on the Internet.

DDNS Setting	
DDNS	○ Enable
Service Provider	ezip 🗸
Host Name	
Account	
Password	
Check WAN IP Schedule	Every Hour V start at 0 : 0
Apply	

DDNS Configuration interface

#### The following table describes the labels in DDNS configuration interface page.

Label	Description
DDNS	Enable or Disable DDNS.
Service Provider	Choose the DDNS service provider.
Host Name	You must first apply an account from the DDNS service Provider such as
	www.dyndns.org, then, register with the dynamic DNS service. Input
	the fixed hostname you got from the DDNS service.
Account	Input the Account you have registered with the DDNS service Provider.
Password	Input the Password for the account you have registered with the DDNS
	service Provider.

Check WAN IP	Device Server will check the IP address Status at the interval time you
Schedule	set.
Apply	Click "Apply" to activate the configurations.

#### 5.1.2.5 User Authentication

User Authentication allows the web management password to be changed.

User Authentication	
Old Password	
New Password	
Confirm New Password	
Apply	

User Authentication interface

The following table describes the User Authentication interface page.

Label	Description				
Old Password	Key in the old password (The default is "admin").				
New Password	Key in the new password.				
Confirm	Po tupo the new password				
password	Re-type the new password.				
Apply	Click "Apply" to activate the configurations.				

## 5.1.3 Port Serial Setting

#### 5.1.3.1 Serial Configuration

Each of the 4 serial ports can be configured by selecting the port number from the drop down menu, editing the parameters, and clicking "Apply".

Serial Configuration			
	Port1 V		
Port Alias	Port1		
Interface	RS232 V		
Baud Rate	38400 🗸		
Data Bits	8 🗸		
Stop Bits			
Parity	None 🗸		
Flow Control	None V		
Force TX Interval Time	0 ms		
Performance	● Throughput ○ Latency		
Apply			

Serial Configuration interface

The following table describes the Serial Configuration interface page.

Label	Description					
Port	Select a port (1-4) to see the settings.					
Port Alias	Each port can be given a name (Defaults are: Port1, Port2, Port3,					
	Port4). This allows the port to indicate the connected device.					
Interface	Select the interface (RS232, RS422, RS485 2 wire, or RS485 4 wire).					
	The default is RS232.					
Baud Rate	The Baud rate can be set to: 110, 300, 1200, 2400, 4800, 9600,					
	19200, 38400, 57600, 115200, 230400, or 460800 bps. The default is					
	38400 bps.					
Data Bits	Data Bits can be set to: 5, 6, 7, or 8. The default is 8.					
Stop Bits	Stop Bits can be set to: 1 or 2(1.5). The default is 1.					
Parity	Parity can be set to: None, Odd, Even, Mark, or Space. The default is					
	None.					
Flow Control	Flow control can be set to: None, XON/XOFF, RTS/CTS, DTR/DSR. The					
	default is None					
Force TX Interval	Force TX interval time is to specify the timeout when no data has					
Time	been transmitted. When the timeout is reached or the TX buffer is					
	full (4K Bytes), the queued data will be sent. When set to 0, this					
	function is disabled. Factory default value is 0.					
Performance	Select one of the two Performance Modes:					
	Throughput provides optimization for highest transmission speed.					
	Latency provides optimization for shortest response time.					
Apply	Click "Apply" to activate the configurations.					

## 5.1.3.2 Port Profile

Port Profile	
	Port1 V
Local TCP Port	4000
Command Port	4001
Mode	Serial to Ethernet
Flush Data Buffer After	0 ms
Delimiter(Hex 0~ff)	1: 00 2: 00 3: 00 4: 00
Mode	Ethernet to Serial
Flush Data Buffer After	0 ms
Delimiter(Hex 0~ff)	1: 00 2: 00 3: 00 4: 00
Apply	

Port Profile interface

#### The following table describes the Port Profile interface page.

Label	Description					
Port	Select a port (1-4) to see the settings.					
Local TCP Port	Enter the Local TCP Port.					
Command Port	Enter the Command Port.					
Flush Data Buffer	Enter the amount of time that the received data will be queued in					
After	the buffer. If the buffer is full (4K Bytes) or if all Delimiters are					
	reached before the time specified the data will be sent. The time					
	can be set from 0 to 65535 seconds.					
Delimiter(Hex 0-	The received data will be queued in the buffer until all the delimiters					
ff)	are reached. Up to 4 delimiters (00-FF, Hex) can be set. If the buffer					
	is full (4K Bytes) or if "Flush Data Buffer After" timeout is reached					
	before the Delimiters are met, the data will be sent.					
Apply	Click "Apply" to activate the configurations.					

## 5.1.3.3 Service Mode – Virtual COM

In Virtual COM Mode, the driver establishes a transparent connection between host and serial device by mapping the Port of the Device server serial port to local COM port on the host computer. Virtual COM Mode also supports up to 5 simultaneous connections, so that multiple hosts can send or receive data by the same serial device at the same time.

Service Mode			
	Port1 V		
Data Encryption	⊖ Enable		
Service Mode	Virtual COM Mode 🗸		
Idle Timeout	0 (0~65535)seconds		
Alive Check	40 (0~65535)seconds		
Max Connection	1 V max. connection (1~5)		
Apply			

Service Mode –Virtual COM interface

The following table describes the Service Mode – Virtual COM interface page.

Label	Description				
Port	Select a port (1-4) to see the settings.				
Data Encryption	Can be enabled or disabled. SSL data encryption is used.				
Service Mode	Select Virtual COM Mode. The default is Virtual COM Mode.				
Idle Timeout	When the serial port stops data transmission for a defined period of				
	time (Idle Timeout between 0 and 65535 seconds), the connection				
	will be closed and the port will be available to connect with other				
	hosts. When set to 0 this function is disabled. The factory default				
	value is 0. If Multilink is configured, only the first host connection is				
	effective for this setting.				
Alive Check	The serial device will send TCP alive-check packet in each Alive Check				
	defined time interval (0 to 65535 seconds) to the remote host to				
	check the TCP connection. If the TCP connection is not alive, the				
	connection will be closed and the port will become available. When				
	set to 0 this function is disabled. The factory default value is 40.				
Max Connection	Select the max number of simultaneous connections between 1 and				
	5. The default is 1.				
Apply	Click "Apply" to activate the configurations.				

#### 5.1.3.4 Service Mode – TCP Server

In TCP Server Mode, the Device Server is configured with a unique Port combination on a TCP/IP network. In this case, the Device Server waits passively to be contacted by the device. After the device establishes a connection with the serial device, it can then proceed with data transmission. TCP Server mode supports up to 5 simultaneous connections, so that multiple devices can receive data from the same serial device at the same time.

Service Mode

	Port1 V			
Data Encryption	○ Enable			
Service Mode	TCP Server Mode 🗸			
TCP Server Port	4000			
Idle Timeout	0 (0~65535)seconds			
Alive Check	40 (0~65535)seconds			
Max Connection	1 V max. connection(1~5)			
Apply				

Service Mode – TCP Server interface

The following table describes the Service Mode – TCP Server interface page.

Label	Description				
Port	Select a port (1-4) to see the settings.				
Data Encryption	Can be enabled or disabled. SSL data encryption is used.				
Service Mode	Select TCP Server Mode. The default is Virtual COM Mode.				
TCP Server Port	Set the Port number for data transmission.				
Idle Timeout	When the serial port stops data transmission for a defined period of time (Idle Timeout between 0 and 65535 seconds), the connection will be closed and the port will be available to connect with other hosts. When set to 0 this function is disabled. The factory default value is 0. If Multilink is configured, only the first host connection is effective for this setting.				
Alive Check	The serial device will send TCP alive-check packet in each Alive Check defined time interval (0 to 65535 seconds) to the remote host to check the TCP connection. If the TCP connection is not alive, the connection will be closed and the port will become available. When set to 0 this function is disabled. The factory default value is 40.				
Max Connection	Select the max number of simultaneous connections between 1 and 5. The default is 1.				
Apply	Click "Apply" to activate the configurations.				

## 5.1.3.5 Service Mode – TCP Client

In TCP Client Mode, the Device Server can establish a TCP connection with a server by the method you set (Startup or any character). After the data has been transferred, the Device Server can disconnect automatically from the server by using the TCP Alive Check time or Idle Timeout settings.

Service Mode					
	Port1 V				
Data Encryption	○ Enable				
Service Mode	TCP Client Mode 🗸				
Destination Host	: 4000				
Idle Timeout	0 (0~65535)seconds				
Alive Check	40 (0~65535)seconds				
Connect on	● Startup ○ Any Character				
Destination Host	Port				
1.	65535				
2.	65535				
3.	65535				
4.	65535				
Apply					

Service Mode – TCP Client interface

The following	a tahla dag	cribes the	Service N		Client interface	nage
The following	g lable ues	cribes the	Service	vioue – ICP	Chefit internace	: page.

Label	Description	
Port	Select a port (1-4) to see the settings.	
Data Encryption	Can be enabled or disabled. SSL data encryption is used.	
Service Mode	Select TCP Client Mode. The default is Virtual COM Mode.	
<b>Destination Host</b>	Set the IP address of host and the port number of the data port.	
Idle Timeout	When the serial port stops data transmission for a defined period of time (Idle Timeout between 0 and 65535 seconds), the connection will be closed and the port will be available to connect with other hosts. When set to 0 this function is disabled. The factory default value is 0. If Multilink is configured, only the first host connection is effective for this setting.	
Alive Check	The serial device will send TCP alive-check packet in each Alive Check defined time interval (0 to 65535 seconds) to the remote host to check the TCP connection. If the TCP connection is not alive, the connection will be closed and the port will become available. When set to 0 this function is disabled. The factory default value is 40.	
Connect On	Select when the Device Server will connect. Select between: <b>Startup</b> : the TCP Client will make a TCP connection once the connected serial device is started. <b>Any Character</b> : the TCP Client will make a TCP connection once the connected serial device starts to send data.	

Destination Host	
Apply	Click "Apply" to activate the configurations.

#### 5.1.3.6 Service Mode – UDP

Compared to TCP communication, UDP is faster and more efficient. UDP mode can use Uni-cast or Multi-cast data from the serial device server to host computers. The serial device can also receive data from one or multiple hosts.

Service Mode			
	Port1 V		
Data Encryption	○ Enable		
Service Mode	UDP Mode V		
Listen Port	4000		
Host start IP	Host end IP	Send Port	
1.		65535	
2.		65535	
3.		65535	
4.		65535	
Apply			

Service Mode – UDP interface

The following table describes the Service Mode – UDP interface page.

Label	Description	
Port	Select a port (1-4) to see the settings.	
Data Encryption	Can be enabled or disabled. SSL data encryption is used.	
Service Mode	Select TCP Client Mode. The default is Virtual COM Mode.	
Listen Port	Set the Listen Port.	
Host Start IP	First Host IP address.	
Host End IP	Last Host IP address.	
Send Port	Set the Send Port	
Apply	Click "Apply" to activate the configurations.	

## 5.1.3.7 Modbus RTU Slave Mode

The Modbus RTU Slave mode allows communications between a host computer and a slave device. After a host computer sends a command, the slave device processes the command and returns a response to the host computer. This process is repeated, allowing the host computer to monitor and control controller operation.

Serial Setting> Service Mode		
	Port1 •	
Service Mode	Modbus RTU Slave Mode	
TCP Server Port	502	
Max Connection	10 (1~128)Connection	
Max Try Time	5 (0~15)Try Times	
Request Pause	100 (1~10000) msec	
Response Wait	100 (1~10000) msec	
Idle Timeout	10 (1~10000)seconds	
Apply Refresh		

Label	Description	
Port	Select the port that the configuration is applied to.	
TCP Server Port	Indicates the port used for the Modbus/TCP communication	
Max Connection	The total number of remote TCP/IP clients allowed to connect to this	
	server.	
Max Try Time	The maximum number of request retries performed serially.	
Request Pause	The delay between serial requests in milliseconds	
Response Wait	The serial response timeout in milliseconds	
Idle Timeout	Enter a TCP connection timeout in seconds. When no Modbus/TCP data is	
	received within this timeout, the TCP connection will be dropped.	
Apply	Click <b>"Apply"</b> to activate the configuration	
Refresh	Click "Refresh" to refresh the port configuration	

## 5.1.3.8 Modbus RTU Master Mode

The ModBus RTU Master mode is used to connect to the serial device which runs as RTU slave. Serial port server will connect to the remote TCP Server, which is also called Modbus TCP Slave.

Serial Setting> Service Mode		
	Port1 T	
Service Mode	Modbus RTU Master Mode •	
Destination Host	: 502	
Idle Timeout	0 (0~65535)seconds	
Alive Check	0 (0~65535)seconds	
Apply		

Label	Description	
Port	Select the port that the configuration is applied to.	
Destination Host	Set the IP address of host and the port number of data port.	
Idle Timeout	When serial port stops data transmission for a defined period of time, the connection will be closed and the port will be freed and try to connect with other hosts. <b>0</b> indicate disable this function and is also the factory default value. If multilink is configured, only the first host connection is effective for this setting.	
Alive Check The serial device will send TCP alive-check packages in each defin time interval to remote host to check the TCP connection. If the T connection is not alive, the connection will be closed and the por be freed. <b>0</b> indicate disable this function. Factory default is <b>0</b> .		
Apply	Click "Apply" to activate the configuration	

## 5.1.3.9 Modbus ASCII Slave Mode

	Port1 •
Service Mode	Modbus ASCII Slave Mode •
TCP Server Port	502
Max Connection	10 (1~128)Connection
Max Try Time	5 (0~15)Try Times
Request Pause	100 (1~10000) msec
Response Wait	100 (1~10000) msec
Idle Timeout	10 (1~10000)seconds

Modbus ASCII Slave mode works the same as Modbus/RTU Slave mode, except that the data format is Modbus/ASCII.

Label	Description	
Port	Select the port that the configuration is applied to.	
TCP Server Port	Indicates the port used for the Modbus/TCP communication	
Max Connection	The total number of remote TCP/IP clients allowed to connect to this	
	server.	
Max Try Time	The maximum number of request retries performed serially.	
Request Pause	The delay between serial requests in milliseconds	
Response Wait	The serial response timeout in milliseconds	
Idle Timeout	Enter a TCP connection timeout in seconds. When no Modbus/TCP data is	
	received within this timeout, the TCP connection will be dropped.	
Apply	Click <b>"Apply"</b> to activate the configuration	
Refresh	Click "Refresh" to refresh the port configuration	

5.1.3.10	Modbus	ASCII	Master	Mode
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Serial Setting> Service Mode		
	Port1 T	
Service Mode	Modbus ASCII Master Mode V	
Destination Host	: 502	
Idle Timeout	0 (0~65535)seconds	
Alive Check	0 (0~65535)seconds	
Apply		

Label	Description		
Port	Select the port that the configuration is applied to.		
Destination Host	Set the IP address of host and the port number of data port.		
Idle Timeout	When serial port stops data transmission for a defined period of time, the connection will be closed and the port will be freed and try to connect with other hosts. <b>0</b> indicate disable this function. Factory default value is <b>0</b> . If Multilink is configured, only the first host connection is effective for this setting.		
Alive Check	The serial device will send TCP alive-check packages in each defined time interval to remote host to check the TCP connection. If the TCP connection is not alive, the connection will be closed and the port will be freed. <b>0</b> indicate disable this function. Factory default is <b>0</b> .		
Apply	Click "Apply" to activate the configuration		

## 5.1.4 Device Server Management

#### 5.1.4.1 Access IP Control List

With the Access IP Control List you can allow only specific remote host IP addresses to prevent unauthorized access. If a host's IP address is in the accessible IP table and Activated, then the host will be allowed to access the Device Server.

Access IP Control List					
□ Enable IP Filtering (Not check this option will allow any IP to have assessibility)					
No.	Activate the IP	IP Address	IP Address Netmask		
1					
2					
3					
4					
5					
6					
7					]
8					
9					
10					
11					
12					
13					
14					
15					
16					]
Apply					

#### Access IP Control List interface

The following table describes the Access Control List interface page.

Label	Description
Enable IP Filtering	When this box is checked IP Filtering is enabled. If it is left
	unchecked IP Filtering is disabled and any host can access the Device
	Server.
Activate the IP	When any of these lines is checked that line will be used to filter the
	allowed IP Addresses.
IP Address	Enter the IP Address or the IP Subnet to be allowed.
Netmask	Enter 255.255.255.255 to allow only a specific IP Address or enter
	the Subnet Mask of the Subnet (eg. 255.255.255.0) to allow all IP
	addresses on that subnet.
Apply	Click "Apply" to activate the configurations.

#### 5.1.4.2 SMTP/SNMP Configuration

With the SMTP/SNMP Configuration interface you can setup E-mail settings, SNMP Trap server and Syslog settings. For E-mail notification up to 4 E-mail addresses can be specified. For SNMP Trap server settings up to 4 SNMP addresses can be specified.

SMTP/SNMP Configuration			
E-mail Settings			
SMTP Server	Port 25		
My server requires a	uthentication		
User Name			
Password			
E-mail Sender			
E-mail Address 1			
E-mail Address 2			
E-mail Address 3			
E-mail Address 4			
SNMP Trap Server			
SNMP Server 1			
SNMP Server 2			
SNMP Server 3			
SNMP Server 4			
Community			
Location			
Contact			
Syslog Server			
Syslog Server IP			
Syslog Server Port	0		
Apply			

#### SMTP/SNMP Configuration interface

The following table describes the SMTP/SNMP Configuration interface page.

Label	Description
SMTP Server and	Enter the SMTP Server IP Address and Port
Port	
Authentication	If your server requires authentication, check the "My server requires
	authentication" box and enter the User Name and Password.

E-mail Sender	Enter the E-mail address that the message will be sent from.		
E-mail Address	Enter up to 4 E-mail addresses to receive notification.		
SNMP Server	Enter up to 4 server addresses to receive notification.		
Community	Enter the server community.		
Location	Enter the location of the server.		
Contact	Enter the name of the server administrator.		
Syslog Server IP	Enter the IP Address of the Syslog Server.		
Syslog Server	Enter the Dert of the Sucley Server		
Port			
Apply	Click "Apply" to activate the configurations.		

#### 5.1.4.3 System Event Configuration

Specify the events that should be notified to the administrator. The events can be alarmed by E-mail, SNMP trap, or system log. For the Port Event Notifications, first select the specific Port you would like to set.

System Event Configuration						
Device Event Notificat	ion					
Hardware Reset (Cold	Start)	SM	TP Mail		SNMP Trap	Syslog
Software Reset (Warn	n Start)	SM	TP Mail		SNMP Trap	Syslog
Login Failed		SM	TP Mail		SNMP Trap	Syslog
IP Address Changed		SM	TP Mail		SNMP Trap	Syslog
Password Changed		SM	TP Mail		SNMP Trap	Syslog
Access IP Blocked		SM	TP Mail		SNMP Trap	Syslog
Redundant Power Cha	inged	SM	TP Mail		SNMP Trap	Syslog
Redundant Ethernet C	Changed	SM	TP Mail		SNMP Trap	Syslog
Port Event Notification	ı	Port1	~			
DCD Changed		SM	TP Mail		SNMP Trap	Syslog
DSR Changed		SM	TP Mail		SNMP Trap	Syslog
RI Changed		SM	TP Mail		SNMP Trap	Syslog
CTS Changed		SM	TP Mail		SNMP Trap	Syslog
Port Connected		SM	TP Mail		SNMP Trap	Syslog
Port Disconnected		SM	TP Mail		SNMP Trap	Syslog
Fault Event Notification and Fault LED/Relay						
Power 1 Fault		1ail		Frap	Syslog	Fault LED/Relay
Power 2 Fault		1ail		Frap	Syslog	Fault LED/Relay
Eth1 Link Down		1ail		Frap	Syslog	Fault LED/Relay
Eth2 Link Down		1ail		Frap	Syslog	Fault LED/Relay
Apply						

System Event Configuration interface

The following table describes the System Event Configuration interface page.

Label	Description			
	This refers to starting the system from power off (contrast this with			
Hardware Reset	warm start). When performing a cold start, the Device Server will			
(Cold Start)	automatically issue an Auto warning message by sending E-mail, log			
	information or an SNMP trap after booting.			
Software Reset	This refers to restarting the system without turning the power off.			
(Marma Start)	When performing a warm start, the Device Server will automatically			
(warm Start)	send an E-mail, log information or SNMP trap after reboot.			
Login Failed	When an unauthorized access from the Console or Web interface is			
Login Falleu	detected, a notification will be sent via the selected method.			
IP Address	When the IP address of the Device Server is changed, a notification			
Changed	will be sent via the selected method.			
Password	When the password of the Device Server is changed, a notification			
Changed	will be sent via the selected method.			
Access IP	When a host with a blocked IP address tries to access the device, a			
Blocked	notification will be sent via the selected method.			
Redundant	When there is a change to the status of power, a notification will be			
Power Change	sent via the selected method.			
Redundant	When there is a change to the status of an Ethernet port, a			
Ethernet	notification will be sent via the selected method.			
Chango				
	When the DCD (Data Carrier Detect) signal changes, indicating that			
DCD changed	the modem connection status has been changed a notification will			
	he sent via the selected method			
DSP changed	When the DSR (Data Set Ready) signal changes indicating that the			
DSK changed	data communication equipment is nowered off a notification will be			
	sent via the selected method			
RI changed	When the RI (Ring Indicator) signal changes, indicating an incoming			
in changed	call, a notification will be sent via the selected method.			
CTS changed	When the CTS (Clear To Send) signal changes, indicating that the			
	transmission between computer and DCE can proceed, a notification			
	will be sent via the selected method.			
Port connected	In the TCP Server Mode, when the device accepts an incoming TCP			
	connection, this event will be triggered. In TCP Client Mode, when			
	the device has connected to the remote host, this event will be			
	triggered. In Virtual COM Mode, when the Virtual COM is ready to			
	use, this event will be triggered. When the Port connected is			
	triggered the Device Server will automatically issue an Auto warning			
	message by sending E-mail, log information or an SNMP trap.			
Port	In TCP Server/Client Mode, when the device loses the TCP link, this			
disconnected	event will be triggered. In Virtual COM Mode, when the Virtual COM			
	is not available, this event will be triggered. When the Port			
	disconnected is triggered the Device Server will automatically issue			
	an Auto warning message by sending E-mail, log information or an			
	SNIVIE trap.			
Power 1 Fault	when a Power I Fault occurs, a notification will be sent and the Fault			
Derrey 2 Fault	When a Dower 2 Foult occurs, a notification will be cont and Foult			
Power 2 Fault	when a Power 2 Fault occurs, a notification will be sent and Fault			

	LED will be on.
Eth1 link down	When Eth1 link goes down, a notification will be sent and Fault LED
	will be on.
Eth2 link down	When Eth2 link goes down, a notification will be sent and Fault LED
	will be on.
Apply	Click "Apply" to activate the configurations.

**Note**: When Fault LED/Relay checkbox is marked and Fault Alarm is happened the Contact Closure that is located on the terminal block (section 3.6) the pin 8 is shorted to the pin 9. When no Fault Alarm is happened the pin 8 and pin 9 are opened.

## 5.1.5 Save/Reboot

The Save/Reboot allows the user to backup or restore a configuration. As well as return to the factory settings, upgrade the Firmware or Reboot the server.

Factory Default
Reset to default configuration
Click Reset button to reset all configurations to the default value.
Reset
Restore Configuration
You can restore the previous saved configuration to Device Server.
File to restore: Browse
Restore
Backup Configuration
You can save current EEPROM value from the Device Server as a backup file of configuration.
Backup
Upgrade Firmware
Specify the firmware image to upgrade.
Note: Please DO NOT power off this device while upgrading firmware.
Firmware: Browse
Ungrade
opgrade
Reboot Device
Please click [Reboot] button to restart device.
Reboot
Save/Reboot interface

The following table describes the Save/Reboot interface <b>p</b>	bage.
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Label	Description
Factory Default	Click the "Reset" button to restore the Device server to the factory defaults.
Destare	Restore a saved configuration by selecting the file through the
Restore	browse button and clicking "Restore".

Configuration		
Backup	Click "Backup" to save the current configuration to a file.	
Configuration		
Upgrade Firmware	To upgrade the Device sever firmware select the file through the browse button and clicking "Upgrade". Note: Do NOT power of the Device server while upgrading the firmware.	
<b>Reboot Device</b>	Click "Reboot" to perform a software reset.	

## 5.1.6 Device Server Help

#### Welcome to Device Server help

SNTP Configuration	Server name, date and time , time server IP address, and Web console, Telnet console Enable, Disable function.
IP Configuration	Lan static IP ,dynamic IP setting, Autoip report Setting.
User Authentication	Assign a password to provide security during remote management.
Return to Default	Reset to Factory Default settings.
Serial Configuration	Operation mode, TCP alive check, inactivity, delimiters, force transmit timeout.
Port Profile	Operation mode, TCP alive check, inactivity, delimiters, force transmit timeout.
Access IP Control List	Set up an IP address table for access permission.
SMTP/SNMP Conf.	Auto warning E-mail and SNMP Trap settings.
System Event Conf.	Set up pre-defined events that will trigger the auto warning alarm.

# **Technical Specifications**

Physical Ports					
10/100 Base-T(X) Ports in RJ45	2				
P.O.E. Feature (optional on iDS6)	P.O.E.Present on ETH2 Power Device (IEEE 802.3af): IEEE 802.3af compliant input interface, Power consumption: 8 Watts max., Over load & short circuit protection, Isolation Voltage: 1000 VDC min., Isolation Resistance : 108 ohms min				
Serial Ports					
Connector	iDS6: 4x RS232 / RS422 / 2-wire RS485 / 4-wire RS485 iDS6P: 4x RS422 / 2-wire RS485 / 4-wire RS485				
Connector	iDS6: Male DB9 iDS6P: 5 pin terminal block				
Serial Baud Rate	110 bps to 460.8 Kbps				
Data Bits	5, 6, 7, 8				
Parity	odd, even, none, mark, space				
Stop Bits	1. 1.5, 2				
RS-232 signals	TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND (iDS6 only)				
RS-422 signals	Tx+,Tx-, Rx+, Rx-,GND				
RS-485 (4 wire) signals	Tx+,Tx-, Rx+, Rx-,GND				
RS-485 (2 wire) signals	Data+, Data-,GND				
Flow control	XON/XOFF, RTS/CTS, DTR/DSR				
Serial Line Protection	Built-in15KV ESD protection				
	2KV DC isolation for each port (iDS6P only)				
LED Indicators					
PWR PoE	Green: Normal operation, Red: Booting, Blinking Red: IP conflict, or DHCP or BOOTP server did not respond properly				
PWR 1	Green: Normal operation, Red: Booting, Blinking Red: IP conflict, or DHCP or BOOTP server did not respond properly				
PWR 2	Green: Normal operation, Red: Booting, Blinking Red: IP conflict, or DHCP or BOOTP server did not respond properly				
Fault	Red: Fault occurred				
S1, S2, S3, S4	Blinking Green: Tx Data, Blinking Red: Rx Data				
Eth 1 (Link and Act)	Green On/Blinking: 100Mbps LNK/ACT Amber On/Blinking: 10Mbps LNK/ACT				
Eth 2 (Link and Act)	Green On/Blinking: 100Mbps LNK/ACT				
Power Requirements					
Power Input	LV: Dual 10-48VDC input	MV: Dual 36-75VDC input	HV: Single Input 88- 300VDC or 85-264VAC with a Single 10-48VDC backup		
Overload Current Protection	Present	<u>.</u>	<u> </u>		
Reverse Polarity Protection Internal					
Power Consumption	7 Watts typical, 15 Watts MAX (7 Watts typical and 8 Watts PoE)				

Software Utility				
Serial Mode	Virtual Com / TCP Server / TCP Client / UDP /Serial Tunnel TCP Alive Check Timeout Inactivity Timeout			
	Force TX Timeout for Data Packing			
	5 Hosts simultaneous connection: Virtual Com / TCP server / TCP Client / UDP			
VCOM Driver	Windows NT/2000/XP/2003/VISTA			
Configuration	Web HTTPS console, SSH console, Console Command			
Environmental				
Storage Temperature	-40 to +85°C (-40 to 185°F)			
Operating Temperature	-40 to +85°C (-40 to +185°F)			
Operating Humidity	5% to 95%(Non-condensing)			
Physical Characteristic				
Enclosure	IP-40 Galvanized Steel Housing			
Dimensions(W x D x H)	52(W) x 106(D) x 144(H) mm (2.05 x 4.18 x 5.68 inch)			
Weight (g)	678 g			
Regulatory Approvals				
EMI	FCC Part 15, CISPR (EN55022) class A			
	EN61000-4-2 (ESD), EN61000-4-3 (RS)			
EMS	EN61000-4-4 (EFT), EN61000-4-5 (Surge)			
	EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11			
Shock	IEC 60068-2-27			
Free Fall	IEC 60068-2-32			
Vibration	IEC 60068-2-6			
Safety	EN60950			
Warranty				
Warranty	5 years			