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DX-2300 Series Industrial Ethernet Cloud Router User Manual

DIACloud Cloud Platform

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DX-2300 Series Industrial Ethernet Cloud Router User Manual

Version	Revision	Date
1 st	The first version was published.	2016/3/21
2 nd	 Add new functions featuring Auto Detect/ Target Address in section 3.2.1. Add a new function featuring PHY Auto Reset in section 3.2.2. Add a new function featuring Storm Filtering in section 3.2.3. Add a new function featuring Remote Access Port in section 3.2.1. Chapter 3: Add new function featuring Set Local PC Time in Section3.4.2. Chapter 3: Update information concerning Transparent mode/ Slave mode/ Master mode/ Serial Server-TCP Server/ Serial Server-TCP Client/ Serial Server-UDP Client/ RS485 mode in Section3.4.3. Chapter 3: Add new function featuring MC master mode in section 3.4.3. Chapter 3: Update information concerning Transparent mode/ Slave mode/ Master mode/ Serial Server-TCP Server/ Serial Server-TCP Client/ Serial Server-UDP Client/ RS485 mode in Section3.4.3. Chapter 3: Update information concerning Transparent mode/ Slave mode/ Master mode/ Serial Server-TCP Server/ Serial Server-TCP Client/ Serial Server-UDP Client/ RS485 mode in Section 3.4.4. Chapter 3: Add new function of Siemens TCP in section 3.4.6. Chapter 3: Update information concerning functions of Diagnosing Method/ Host Name/IP Address in section 3.4.14. Chapter 3: Add new function of Trouble shooting in section3.4.15. Chapter 3: Add new function of Add/ Export Configure List/ Import Configure List/ Register Type/ Register Start Address in section 3.4.18. Chapter 4: Update information concerning functions of PPI and add new function of Auto Baudrate. In section 4.2.2. 	2020/5/14

Revision History

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About This Manual

The user manual is suitable for **DX-2300LN-WW**. If you need to use the Delta DX-2300 series products in China areas, please refer to the model name **DX-2300LN-CN** on the Delta website, or contact our branch offices or distributors.

FCC 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 in a residential installation.

This equipment generates radio frequency signal and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

---Reorient or relocate the receiving antenna.

---Increase the separation between the equipment and receiver.

---Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

---Consult the dealer or an experienced radio/TV technician for help.

CE Declaration of Conformity

In accordance with the Directives 2004/108/EC*, 2014/30/EU, 2006/95/EC* and 2014/35/EU. The test record, data evaluation and DX-2300 Series configurations represented herein are true and accurate under the standards herein specified.

Disclaimers and Limitation of Liabilities

To the maximum extent permitted by law and regardless DELTA be aware or has been advised of the possibility of these damages, DELTA is not liable to any user or anyone else for: (a) any loss of use, data, reputation, goodwill, credit, opportunity, economy or profits, whether or not foreseeable; (b) any special, incidental, indirect, consequential, or punitive damages whatsoever; (c) any losses or damages based on any theory of liability, including breach of contract or warranty, negligence or other tortious action; (d) any losses or damages resulting from use or unable to use the systems or devices to which the Software or Services are incorporated or co-operated; and (e) any losses or damages arising from any other claim or in connection with the use of or access to the Software or Services.

1.1 Product Overview

The DX-2300LN-WW is a wired industrial router, an Internet of Things wired communication product of industrial grade.

The product is equipped with multiple application interfaces, including Ethernet interface, RS232 serial interface and RS485 serial interface, and thus can satisfy the user's various different application demands.

The product supports DIACloud platform services, and by this platform, convenient and efficient point-to-point connection with the router, safe and reliable data transmission, remote device management and configuration, remote firmware upgrading, remote maintenance and other functions can be realized, so as to save the cost of device operation and maintenance for users.

The product can be widely used in the fields requiring mobile network interconnection, such as industrial automation, smart home, intelligent building, smart power grids, video surveillance, intelligent self-service and intelligent transportation.



1.1.1 Network Design

Connect the intelligent devices at different sites to the Internet via the DX-2300LN-WW. The DX-2300LN-WW allows the point-to-point connection through DIACloud platform. In addition to safe and reliable data transmission, it can save the cost of purchasing and maintaining VPN device.

The maintenance personnel can realize remote maintenance and management of the device through DIACloud platform whenever and wherever possible, which can ensure safe and reliable data transmission, and also can save operation and management cost of the device for users.



1.1.2 Features

- Device support various connection method in WAN port, such as the static IP, DHCP client.
- Provide dual serial port (RS232 & RS485) and LAN port connectivity.
- Build in Watch-Dog.
- NTP server built in RTC.
- Local and remote firmware upgrade.
- Support Firewall: Stateful Packet Inspection (SPI), Prevent Denial of Service (DoS) Attacks, NAT (Network Address Translation), Port Trigging, Port Mapping, IP Address Filtering, MAC Address Filtering, URL Filtering, DHCP Server, Dynamic DNS, Static Routes, Demilitarized Zone (DMZ)
- TCP/IP, UDP, ICMP, DHCP, HTTP, DNS, SSH protocol
- Modbus TCP and Modbus RTU / ASCII protocol
- Mitsubishi MC and Siemens ISO TCP protocol
- SMS alarm functions, users can customize the alarm condition
- Provide task schedule management
- Local log and remote log server
- Configuration backup and importing
- Network data flow statistic
- Networking failure diagnostic
- DIACloud platform services that can realize safe point-to-point data transmission, remote device configuration and management, firmware upgrading, and support batch configuration and upgrading of multiple devices

1.1.3 Front Panel Ports and LEDs



1.1.4 Bottom Panel



🚺 Notice

This router's reset button is on the front panel. By pressing the Reset button, users can reset the router or reset the router to factory default settings. See the instruction below:

• Reset the Router: With the router powered on, press the Reset button and release the button right away.

- Reset to Factory Defaults: With the router powered on, press and hold the Reset button for 3~6 seconds and then release the button.
 - Reset can only be done when the device is running properly.

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With the router powered on, press and hold the Reset button until all the LEDs go out (Except the Power LED). Then release the button and wait the router to reboot to its factory default settings.

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1.1.5 Dimension

Unit = mm









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1.2 Package Checklist

Unpack the package carefully and check the package contents. The package should contain the following items:

- DX-2300LN-WW Industrial Ethernet Cloud Router x1
- Quick Installation Sheet x1
- Accessory for Wall-mounting installation x1

🚺 Notice

• Verify that nothing is missing from the DX-2300LN-WW package by using the check list above. If any item is found missing or damaged, please contact your local sales representative for support.

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Chapter 2 User Interface

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2.1 Web-based GUI Configuration

The DX-2300LN-WW Industrial Ethernet Cloud Router provides a friendly Web Browser Configuration for users to set up and operate more intruitivly.

2.1.1 System Connection

First, connect the PC used for configuration with Ethernet interface of the router directly or through the switch/hub.



2.1.2 Default IP Address/Account/Password

The default IP address of router is 192.168.5.5. The initial account and password is admin/admin.

2.1.3 Local Network Setups

After the connection of the local computer and the router is done, you will need to set the network configruration for your computer. There are 2 methods for the setting, we suggest you to use the first one:

• Obtain an IP address automatically by using the router as a DHCP server.

- 1. Open Network Connections by clicking the Start button 🧐, and then clicking Control Panel.
- 2. Under Network and Sharing Center, click View network connections.
- 3. Right-click the connection that you want to change, and then click Properties. 😻 If you're prompted for an administrator password or confirmation, type the password or provide confirmation.
- 4. Click the Networking tab. Under This connection uses the following items, click either Internet Protocol Version 4 (TCP/IPv4) or Internet Protocol Version 6 (TCP/IPv6), and then click Properties.

5. Click Obtain DNS server address automatically and then click OK to get a DNS server address automatically using DHCP.

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DeFault gateway: Obtain DNS server address automatically Use the following DNS server addresses: Preferred DNS server: Alternate DNS server: Validate settings, if changed, upon exit Advanced	net Protocol Version 4 (TCP/IPv4)) neral Alternate Configuration pu can get IP settings assigned au is capability. Otherwise, you need or the appropriate IP settings. Obtain an IP address automati Use the following IP address: IP address:	OK Properties tomatically if your n to ask your networ cally	etwork supports k administrator
Obtain DNS server address automatically Use the following DNS server addresses: Preferred DNS server: Alternate DNS server: Validate settings, if changed, upon exit Advanced	net Protocol Version 4 (TCP/IPv4) I neral Alternate Configuration ou can get IP settings assigned au is capability. Otherwise, you need or the appropriate IP settings. Obtain an IP address automati Use the following IP address: IP address: Subnet mask:	OK Properties tomatically if your n to ask your networ	etwork supports
 Obtain DNS server address automatically Use the following DNS server addresses: Preferred DNS server: Alternate DNS server: Validate settings, if changed, upon exit Advanced	et Protocol Version 4 (TCP/IPv4) neral Alternate Configuration bu can get IP settings assigned au is capability. Otherwise, you need or the appropriate IP settings. Obtain an IP address automati Use the following IP address: IP address: Subnet mask: Default gateway:	OK Properties tomatically if your networ to ask your networ cally	etwork supports
Use the following DNS server addresses: Preferred DN5 server: Alternate DN5 server: Validate settings, if changed, upon exit Advanced	net Protocol Version 4 (TCP/IPv4)) neral Alternate Configuration ou can get IP settings assigned au is capability. Otherwise, you need or the appropriate IP settings. Obtain an IP address automati Use the following IP address: IP address: Subnet mask: Default gateway:	OK Properties tomatically if your n to ask your networ cally	etwork supports k administrator
Preferred DNS server:	net Protocol Version 4 (TCP/IPv4) I neral Alternate Configuration ou can get IP settings assigned au is capability. Otherwise, you need or the appropriate IP settings. Obtain an IP address automati O Use the following IP address: IP address: Subnet mask: Default gateway: Obtain DNS server address automati	OK Properties tomatically if your n to ask your networ cally	etwork supports k administrator
Alternate DNS server:	net Protocol Version 4 (TCP/IPv4) I neral Alternate Configuration ou can get IP settings assigned au is capability. Otherwise, you need or the appropriate IP settings. Obtain an IP address automati Use the following IP address: IP address: Subnet mask: Default gateway: Obtain DNS server address au Use the following DNS server a	OK Properties tomatically if your networ to ask your networ cally comatically ddresses:	etwork supports k administrator
Validate settings, if changed, upon exit	net Protocol Version 4 (TCP/IPv4) neral Alternate Configuration ou can get IP settings assigned au is capability. Otherwise, you need or the appropriate IP settings. Obtain an IP address automati Use the following IP address: IP address: Subnet mask: Default gateway: Obtain DNS server address aut O Use the following DNS server a Preferred DNS server:	OK Properties tomatically if your notion to ask your networ cally comatically ddresses:	etwork supports k administrator
	net Protocol Version 4 (TCP/(IPv4)) neral Alternate Configuration bu can get IP settings assigned au is capability. Otherwise, you need or the appropriate IP settings. Obtain an IP address automati Ouse the following IP address: IP address: Subnet mask: Default gateway: Obtain DNS server address aut Ouse the following DNS server a Preferred DNS server: Alternate DNS server:	OK Properties tomatically if your networ cally cally ddresses:	etwork supports k administrator

• Set up the IP address manually.

(The IP address of the computer should be in the same network segment as the router's.)

Since the router's default IP address is 192.168.5.5 and the subnet mask is 255.255.255.0, the computer's IP address can be set between 192.168.5.1 to 192.168.5.254 except 192.168.5.5. However, you'll need to make sure there are no IP conflicts.

Here, we set the address to 192.168.5.10 and the default gateway to 192.168.5.5. For DNS, the usable DNS address can be selected or the address can also be set to 192.168.5.5.

eneral	
You can get IP settings assigne this capability. Otherwise, you for the appropriate IP settings	ed automatically if your network supports need to ask your network administrator ,
🔘 Obtain an IP address auto	omatically
Use the following IP addre	ESS:
IP address:	192.168.5.10
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	192.168.5.5
Obtain DNS server addres	ss automatically
• Use the following DNS ser	ver addresses:
Preferred DNS server:	192.168.5.5
Alternate DNS server:	1. C.
Validate settings upon ex	it Advanced

2.1.4 Logging in

1. Open your Internet Explorer browser and input LAN IP address (Default is 192.168.5.5) in the search bar and then press Enter.

C http://192.168.5.5/login.html	ttp://192.168.5.5/login.html	P + C 🦉 DIADevice	ж
---------------------------------	------------------------------	-------------------	---

2. You'll be prompted with the log-in page. Input the user name and the password (Default is admin/admin) and then press Enter to log in to the setup page.

DX-2300	
User Name	
Password	
	LOGIN

3. After login, you can see the main selection area on the left hand side and the upper area of the page. The detailed settings can be seen on the right hand side of the page.

DX-2300	STATUS	NETWORK	FIREWALL	SYSTEM	CLOUD SERVICE
	Device I	nformation Devid	e info help.		
Device Information	STAT	US > Device Informati	on		
Network Status	III Harr	duara Varciaa			
Routing Table	RTM Ve	rsion.	DX2300+2		
Local Log	Release	Date:	2015-06-26 04:05:5	3 PM	
Traffic Information	S/N:		DXL02040F210006	5	
Cloud Status	III Sof	tware Version			
Connected Device	RTM Ve	ersion:	DX2300 1.0.0.1		
	Release	Date:	2015-06-26 04:05:5	3 PM	
	Current	Version:	DX2300-1.0.0.5-201	15-11-04	
	Upgrade	Date:	2015-11-06 14:44:3	5	
	III Rese	ource Usage Info	rmation		
	CPU Us	age:	15%		
	Total M	emory:	123864KB		
	Memory	Used:	62992KB		
	Memory	Usage:	50%		

2.2 DIADevice

DIADevice is a tool for quickly configuring network devices. Users simply connect the DX device to the PC through the network cable. This tool can be used to quickly and easily configure the network setting of the device and complete the device binding DIACloud cloud account.

The DIADevice software is included in the latest DIACom software package. From the official website or sales staff to obtain DIACom packag. The following example uses DX-2300 to show you how to configure your device with DIADevice.

2.2.1 Device connection and detection

- 1. Connect the device to the power supply, and connect the device to the PC using a network cable. Plug the network cable connected to the Internet into the WAN port of the device
- 2. Run DIADevice and click 'Detect' button

3. After DIACom detects the device, it will automatically go to the login page, and the user needs to enter login password on the login page.

DIADevice				×
DIADevice	Username Password	DX2300 admin Logan • Please login with device pass	word.	
				1 A A A A A A A A A A A A A A A A A A A

4. After passing the authentication, the device information page is displayed, including the basic device information (Device Name, S / N, firmware, LAN IP address), network status, WAN information, and cloud service information

	🗸 Internet Connect	ed	
	& WAN		Network Setting
Anne	WAN Type I	HCP	
	IP Address	.123	
	Gateway Address	254	
Harris .	Cloud.		Bind Device
	User Account	com	-
	Secure Tunnel E	DeltaNetwork	
test	Service Status E	inabled	
Onen Davies Webnern			

2.2.2 Network Setting

This feature allows you to quickly configure your network in three steps.

1. Click "Network Setting"

	🛹 Internet Co	nnected	
	& WAIN		Network Setting
A MALE	WAN Type	DHCP	
	IP Address	.123	
	Gateway Address	254	
The second of	Cloud		Bind Device
	User Account	Com	-
	Secure Tunnel	DeltaNetwork	
test	Service Status	Enabled	
Onen Device Webnam			

2. The default is DHCP. If you can not connect to the Internet using auto-setup, please use manual settings.

WAN Type	DHCP	<u>·</u>	
IP Address	172,16 155 123		
Subnet Mask	255,255,255,0		
Gateway Address	172 16 155 254		
DNS	Dynamic	-	
DNS Server	172,16 144,200		

3. Please confirm the network environment and then decide whether to enable HTTP Proxy. If you need to set up HTTP PROXY, contact your IT staff.

		2	•	
	HTTP Proxy	Enabled	-	
Prox	y IP Address			
	Port			
	Username			
	Password			

- DIADevice
- 4. After the device successfully connected to the Internet, the connection would be successful.

2.2.3 Bind Device

This feature allows you to quickly bind your device to the DIAcloud in three steps.

1. Click "Bind Device"

	Internet Co	nnected	
Same	& WAIN		Network Setting
Antras Lange	WAN Type	DHCP	
	IP Address	.123	
	Gateway Address	254	
Harry .	Cloud		Bind Device
	User Account	com	
	Secure Tunnel	DeltaNetwork	
test	Service Status	Enabled	
Com Durine Weber			

2

2. Enter the DIAcloud account number and password, and click Next.

DIADevic		×
	Password	
		< Back Next >

3. After binding configuration is configured, click "Bind" to bind.

DIADevice	
	1 2 3
Cloud Account	com
Device Name	DX2100_B0B4
Secure Tunnel	DeltaNetwork 🔽
Cloud DHCP	P Enabled
Retrieve IP address from cloud	No
DHCP IP Range	192.168.100.100 - 192.168.100.200
LAN IP Address	192.168.100.100
	< Prev Bind >



4. If your device is successfully bound to the cloud, the following screen will appear

Notice If the device has been bound to the cloud account, you need to switch to another cloud account binding, you only need to repeat 1-3 steps and then enter the new cloud account you need to bind

2.2.4 Open Device Webpage

Click "Open device webpage" button, the browser will open the device settings page, the user can set the parameters of RS232 / 485 configuration.

	Thernet Con	nected	
	& WAIN		Network Setting
A Marte	WAN Type	DHCP	
	IP Address	123	
	Gateway Address	254	
	Cloud		Bind Device
	User Account	com	-
	Secure Tunnel	DeltaNetwork	
	Service Status	Enabled	
n IP Address; 192.168.100.200	SN: DX23000216260055	Firmware: DX230	0WW-1.3.3.1-2016-11+1
n IP Address; 192.168.100.200	SN: DX23000216260055	Firmware: DX230	0WW-1,3,3,1-2016-11+1 1
n IP Address; 192.168.100.200	SN: DX23000216260055	Firmware: DX230	0WW-1.3.3:1-2016-11+1
C O www.diadevice.com/login.htt	SN: DX23000216260055	Firmware: DX230	0WW-1.3.3.1-2016-11+1
C O www.diadevice.com/login.htt	SN: DX23000216260055	Firmware: DX230	0WW-1.3.3.1-2016-11+1
C () www.diadevice.com/login.htt	SN: DX23000216260055	Firmware: DX230	0WW-1,3,3,1-2016-11+1
n IP Address; 192.168.100.200	SN: DX23000216260055 ml	Firmware: D3230	0WW-1,3,3,1-2016-11+1
C O www.diadevice.com/login.htm	SN: DX23000216260055	Firmware: DX230	0WW-1.3.3.1-2016-11+1

2.3 Typical application configuration

DX-2300 is an industrial-grade cloud router, with DX-2300 users can easily and quickly collect remote data and perform remote device debugging.

2.3.1 Data collection

DX router can connect to the Slave via serial port or Ethernet port, router builtin more than 2000 registers, through standard Modbus RTU ASCII and Modbus/TCP protocol, and Mitsubishi MC and Siemens TCP protocol, work as Master/Slave role to collecti/receivE data, and upload data to the cloud.

The basic steps of data collection are as follows:

Register DIACloud Account



Config DX Router

- Network setting
- Interface setting
- Registers management
- Cloud account setting

View data in DIACloud

1. Register DIACloud Account

Cloud account is an important credential of DX router ownership. When the router is bound with a DIACloud account, only the account or the sub-account authorized by the account can access the device remotely. All data uploaded by the router belongs to this account, which can only be accessed by this account or sub-accounts authorized by this account. If you don't already have a cloud account, follow these steps to register:

Browsing DIACloud website (<u>http://www.DIACloudSolutions.com</u>), click "CREATE AN ACCOUNT".

A Bernard (
Password
Remember Me
LITGIN

• Fill in account info and select "I Agree", click "CREATE AN ACCOUNT" button.



• Login your mailbox. Open the activation email sent from <u>no-reply@DIACloudSolutions.com</u> and complete DIACloud account activation operation.

2. Config DX Router

Here shows how to config the DX router, make it as the modbus master to collect the data from Delta PLC via RS-485.

- Connect DX router to local PC via cable, login the config GUI, See section 2.1 for more details.
- DX-2300 is a wire router. You can go to "Network"-"WAN Configurations" to set up the parameters for internet connection.

WAN Configurations

WAN Connection Mode	DHCP 🗸
IP Allocation Method	Dynamic \sim
IP Address	0.0.0.0
Network Mask	0.0.0
Gateway Address	0.0.0.0
Packet MTU	1500
(Don't change the settings unl	ess really need to)
Retrieve DNS Address By:	Dynamic \checkmark
Primary DNS	0.0.0
Secondary DNS	0.0.0

Save Cancel

After configuration, you can go to" Status"-"network status" to confirm the connection is ready.

Cloud service \sim

Internet Information

Auto Detect

MAC Address	00:30:AB:35:8C:6C	:	
IP Address	<u>1</u>	Network Mask	255.255.255.0
Gateway Address	4	WAN Connection Mode	STATIC
Primary DNS	114.114.114.114	Secondary DNS	2
WAN Status	Connected		

• Go to "System"-"RS485" and enter RS-485 setting page, set the working mode as "Master mode". Detail configuration is as follows::

III RS485						
Working Mode	Master mode	\sim				
Baud Rate	9600 🗸					
Data Bits	8 ~					
Stop Bits	1 ~					
Parity Bits	None \checkmark					
Slave ID	1					
Mode	Modbus RTU $$					
Timeout	200	(ms)				
Read/Write Configuration	1					
Scan Interval	30000	(ms)				
When communicate with PLC input 0 for register D0.	of Delta, the starting a	address ca	n be set as	the interr	nal register num	ber. For example,
The acceptable address range	of this device is: \$0-	\$1535 or \$	2048-\$409	5 or M0-M	4511.	
Add Mapping	s Delete All Mappir	n <mark>gs</mark> Ex	kport Configu	re List	Import Configur	e List
			浏览			
Row Number Read/Write Sla	/e Controller	Address Type	Slave Starting Address	Bit	Device Starting Address	Length (1-123) Operation
1 Dead/Write V 1		D			10010	

|--|

• Go to "System"-"Register Management" and enter register setting page, set up the data upload rules. Detail configuration is as follows:

i≣ Add			
Register Type	Word \checkmark		
Register Address	\$2048	(\$204	48-4095, M0-511)
Length	10		
Uploaded To Cloud	Yes \checkmark		
Keep History	No 🗸		
		Save	Back

• Go to "Cloud Service"-"Cloud configurations" and enter account setting page, binding the device with DIACloud account. Detail configuration is as follows:

$\stackrel{}{ ambda}$ CLOUD SERVICE > Cloud Configurations

Cloud Configurations			
User Name:	diacloud@163.com]	
Password:	•••••	Verify	
	Parts of firewall function v	will loss effect when device is binding success!	

Click the "verify" button to verify the user name/password, it will show below page after verification is pass. Users can use the default parameters. Click the "bind" button to bind the device to this account.

Cloud Configurations

User Name:	diacloud@163.com
Password:	•••••••••Verify
	Parts of firewall function will loss effect when device is binding success!
Secure Tunnel:	default 🗸
Device Name:	DX2300_8C8B
Secure Tunnel DHCP:	Not available
When DHCP server in the secu	re tunnel network is not available, the IP address of the secure tunnel will be the LAN IP,
if you want to change it ,pleas	e go to LAN configuration web page
Device IP:	192.168.10.40
Network Protocol:	

After binding successful, you can log in the device configuration page again and check the binding information. ~

*		SERVICE	~	Cloud	Configurations
п	CLOUD	SERVICE	>	Cioud	Configurations

User Name:	diacloud@163.com	
Registration Status:	Registered	Unbind
Service Status:	Enabled	Disable
Secure Tunnel:	default	
Device Name:	DX2300_8C8B	
Secure Tunnel DHCP:	Not available	
Device IP:	192.168.10.40	
Network Protocol:	UDP	

3. View data in DIACloud

- Browsing DIACloud website, login with your account.
- Click "Devices" from the menu, find the device and click the *** to view the details.
- Select "Registers" and a register list will be displayed, values shown behind register addresses are collected data.

OVERVIEW	REGISTERS	SERVIC	ES M	IORE
Q Search		¢	1/200	>
\$2048	2	2363 /	3:04	:
\$2049	2	2232 / 018-07-27 03	3:04	:
\$2050	2	2206 /	3:04	:
\$2051	0 2	018-06-06 17	7:56	:
\$2052	0 2	018-06-06 17	7:56	:
\$2053	2	2214 / 018-07-27 03	3:04	:
\$2054	1	0 / 018-06-06 15	7:56	:
\$2055	2	2047 / 018-07-27 03	3:04	:
\$2056	3	018-06-06 15	7:56	:

2.3.2 Remote debugging

DX router have built-in DIACloud cloud service, so when the router is bound to the DIACloud account and connected to the DIACloud cloud platform, the router and the cloud platform will create a secure tunnel, and all the devices in the same secure tunnel group under the account will be in the same secure virtual LAN. With our DIACom PC tool, users can also add their local computers to the virtual LAN, allowing them to download and debug remote devices as if they were operating locally, either through the network port or by creating a virtual serial port.

Register DIACloud Account



Config DX Router

- Network setting
- Interface setting
- Cloud account setting



- Installion and Login
- Create secure tunnel
 - Remote debug

1. Register DIACloud Account

If you've already had a DIACloud account, skip this step. To register a new account, please refer to section 2.3.1.

2. Config DX Router

Here show how to config the DX router and perform remote debug Delta PLC via RS-485.

Connect DX router to local PC via cable, login the config GUI, See section 2.1 for details

DX-2300 is a wire router. You can go to" Network"-"WAN Configurations" to set up the parameter for internet connection. After configuration, you can go to" Status"-"network status" to confirm the connection is ready.

🔳 Internet Information

MAC Address	00:30:AB:35:8C:60	2	
IP Address	1	Network Mask	255.255.255.0
Gateway Address	4	WAN Connection Mode	STATIC
Primary DNS	114.114.114.114	Secondary DNS	2
WAN Status	Connected		

• Go to "System"-"RS485" to enter RS-485 setting page, set up it's working mode to "Transparent mode", configuring as follows:

Transparent mode \sim
9600 ~
8 ~
1 ~
None \checkmark

• Go to "Cloud Service"-"Cloud configurations" to enter account setting page, binding the device with DIACloud account, please refert to section 2.3.1 for more details.

3. DIACom Tool

• Obtain the DIACom firmware package from the official website or from our sales representative. Administrator privileges are required to run and install the package. After install successfully, run this programe and login with DIACloud account.

DIACom	té	§ — X
 diacloud@163.com •••••• Remember me 	Forgot?	
Log In		
Sign up for DIACloud		1.4.1.4

 Select the tunnel group which router belongs to. Set up local IP address same segment with DX route. And click "Create Tunnel" button.

10.103.138.86

10.56.71.135

10.112.239.213

10.108.69.82

10.59.127.219

Local IP Address

_

_

_

_

_

192.168.10.2

					diacloud@163.com	n ⊽ —	×
DIACom	Secure	e Tunnel					
Q							
default	Local I	P address 💿 DHCP	Cloud DHCP disable	d	Crea	ate Tunnel	
		Static	192 - 168 - 10 -	2 / 255 - 2	255 - 255 - 0		
ny-test1-1234	Status	Name	SN	Latency	IP Address	Operatio	n Â
fly-test3	Online	DX2300_8C8B	DX23000316180001	22 ms	192.168.10.40	_	
feifa1	Offline	VR500L1_7AE6	VR05000218410024	-	192.168.5.5	-	
demo隧道	Offline	告鑿测试	DX21000218420008	-	192.168.200.10		
客户A 隧道	Offline	VR500L1_6D81	VR05000218290012	-	192.168.5.5		
客户B 隧道	Offline	DX501L1_7B09	DX05010118410059	-	10.181.150.33		
这户C 隧道	Offline	lilytest	VR05000217220010	-	10.128.157.158		
	Offline	VR500L1_2323	VR05000218010101	-	10.103.138.86		
各户D 随道	Offline	VR500L1办公室挂机(勿动)	VR05000218290039	-	10.56.71.135		
xinyi_vln	Offline	VR-500H1	VR05000218201234	-	10.112.239.213		
fanhai	Offline	VR-500H1	DX05000218290030	-	10.108.69.82		
1 / 6 << > >	Offline	VR-500H1	VR05000218290101	-	10.59.127.219	-	-
				Lo	cal IP Address	N/A	
					diacloud@163.con	ע –	×
DIACom	Secure	e Tunnel					
Q					_		
default	Local I	P address 💿 DHCP	Cloud DHCP disabled	ł	Dis	connect	
EMEA_Tunnel		 Static 	192 - 168 - 10 -	2 / 255 - 2	55 - 255 - 0		
fly-test1-1234	Status	Name	SN	Latency	IP Address	Operation	A
fly-test3	Online	DX2300_8C8B	DX23000316180001	21 ms	192 168 10 40		
feifa1	Offline	VR500L1_74E6	VR05000218410024	-	192.168.5.5		
demo隧道	Offline		DX21000218420008	-	192.168.200.10		-
	Offline	VR500L1 6D81	VR05000218290012	-	192.168.5.5		
	Offline	DX501L1 7B09	DX05010118410059	-	10.181.150.33		
客户B 隧道	Offline	lilytest	VR05000217220010	-	10.128.157.158		
客户C 隧道							-

After the tunnel has been created, click web button of the DX router, goto create virtual com page. If "Create" button is not available, please check the RS-485 wrok mode in DX router config page.

VR05000218010101

VR05000218290039

VR05000218201234

DX05000218290030

VR05000218290101

Offline

Offline

Offline

Offline

52 ms

客户D 隧道

1 / 6 < < > >

Secure tunnel is set up.

VR500L1_2323

VR-500H1

VR-500H1

VR-500H1

Offline VR500L1办公室挂机(勿动)

DIAcom			diacloud@163	.com ⊽ - ×
	Virtual COM I	Port		
Q	Device Name D	X2300 8C8B - Online		Back
default				Dack
EMEA_Tunnel	IP Address 1	92.168.10.40 300 ms		
fly-test1-1234	RS-485			
fly-test3	COM Port	Auto 💌 🗆 PPI		Create
feifa1	COM Port	Baudrate	Stop Bits	
demo隧道	Data Bits	Parity Bits	Status	
客户A 隧道				
客户B 隧道	RS-232			
客户C 隧道	COM Port	Auto 👻		Create
客户D 隧道	COM Port	Baudrate	Stop Bits	
xinvi vln	Data Bits	Parity Bits	Status	
fanhai				
1 /6 << >>				
Secure tunnel is set up.	28 ms		Local IP Address	192.168.10.2
DIAcom			diacloud@163	.com ⊽ — X
DIAcom	Virtual COM I	Port	diacloud@163	.com
DIACom	Virtual COM I	Port	diacloud@163	.com
DIA Com Q default	Virtual COM I	Port X2300_8C8B - Online	diacloud@163	.com
DIA Com Q default EMEA_Tunnel	Virtual COM I Device Name D IP Address 1	Port X2300_8C8B - Online 92.168.10.40 300 ms	diacloud@163	.com ∇ — X Back
DIACom Q default EMEA_Tunnel fly-test1-1234	Virtual COM I Device Name D IP Address 1 RS-485	Port X2300_8C8B - Online 92.168.10.40 300 ms	diacloud@163	.com ⊽ — X Back
DIA Com Q default EMEA_Tunnel fly-test1-1234 fly-test3	Virtual COM I Device Name D IP Address 1 RS-485 COM Port	Port X2300_8C8B - Online 92.168.10.40 300 ms Auto v PPI	diacloud@163.	.com
DIACom Q default EMEA_Tunnel fly-test1-1234 fly-test3 feifa1	Virtual COM I Device Name D IP Address 1 RS-485 COM Port COM Port CO	Port X2300_8C8B - Online 92.168.10.40 300 ms Auto PPI M5 (Connected) Baudrate - 	diacloud@163.	.com ⊽ — X Back Delete
DIACom Q default EMEA_Tunnel fly-test1-1234 fly-test3 feifa1 demo隧道	Virtual COM I Device Name D IP Address 1 RS-485 COM Port COM Port CO Data Bits -	Port X2300_8C8B - Online 92.168.10.40 300 ms Auto PPI M5 (Connected) Baudrate Parity Bits - 	diacloud@163. Stop Bits - Status Idle	.com
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DIACom Q default EMEA_Tunnel fly-test1-1234 fly-test3 feifa1 demo隧道 客户A 隧道 富户A 隧道 富户D 隧道 就nyi_vln fanhai 1 / 6 (< < >)	Virtual COM I Device Name D IP Address 1 RS-485 COM Port CO Data Bits - RS-232 COM Port COM Port COM Port COM Port COM Port COM Port	Port X2300_8C8B - Online 92.168.10.40 300 ms Auto PPI M5 (Connected) Baudrate Parity Bits Auto Baudrate Parity Bits	diacloud@163 Stop Bits - Status Idle Stop Bits Status	Create

• After the virtual serial port is created, open the corresponding debugging tool WPLSoft of Delta PLC, you can remotely download the program to the PLC, which connect to DX router through RS-485.

2

Tune	B8222	100
Type	183232	1
Communication Sett	ing	*
COM Port	COM5	· ASCII
Data Length	8	RTU (8 bits)
Parity	Even	-
Stop Bits	1	Auto-detect
Baud Rate	9600	•
Station Address	1	- Default
Ethemet Setting		
┌─ Assign IF	192.168. 1.	5
Port	502	-
Baud Rate Decide	d by	
PLC Setting		
C WPL Setting		
Setup Responding	g Time	
Times of Auto-ret	ry	3 -
Time Interval of A	uto-retry (sec	3 4
This interval of th	ato-reay (see.	/ F 🔟
MEMO

3

Chapter 3 Functions

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3.1 Status

You can view summary or detailed information on the Device Information, Network Status, Routing Table, Local Log, Traffic Statistics, Cloud Status, and Connected Device.

3.1.1 Device Information

This page shows basic information on the Hardware/Software version and Resource Usage Information.

I Hardware Version

RTM Version:	BlueGinger-DX2300 v1
Release Date:	2015-02-15 05:05:37 AM
S/N:	DXL02040D340005

Software Version

RTM Version:	BlueGinger-DX2300 0.5.0
Release Date:	2015-02-15 05:05:37 AM
Current Version:	DX2300WW-1.3.1.1-2016-04-29
Upgrade Date:	2016-04-29 17:24:07

Resource Usage Information

CPU Usage:	15%
Total Memory:	123832KB
Memory Used:	62124KB
Memory Usage:	50%

Hardware Version

ltem	Description
RTM Version	Release to manufacturing version of the router
Release Date	Hardware release date
S/N	Serial number of the router

Software Version

ltem	Description
RTM Version	Release to manufacturing version of the software

Release Date	Software release date
Current Version	Version number of the software currently used on the router
Upgrade Date	Upgrade time of the software currently used on the router

Resource Usage Information

Item	Description
CPU Usage	The CPU usage of current router
Total Memory	The total memory on the router
Memory Used	The memory currently used on the router.
Memory Usage	The current ratio of the router usage

3.1.2 Network Status

This page shows basic information on Internet Information and LAN Status.

Internet Information includes the MAC Address, IP Address, Gateway Address, Primary DNS, Network Mask, WAN Connection Mode, and Secondary DNS.

LAN Status includes the Device Name, IP Address, DHCP Server, MAC Address and Network Mask. When the DHCP server is enabled, you can see more information, including the address lease time, start address and end address.

☆ STATUS > Network Status

🗏 Internet Information

MAC Address	00:23:11:22:33:4C		
IP Address	0.0.0.0	Network Mask	0.0.0.0
Gateway Address	0.0.0.0	WAN Connection Mode	DHCP
Primary DNS	0.0.0.0	Secondary DNS	0.0.0.0
🖩 LAN Status			
Device Name	DX2300_334D	MAC Address	00:23:11:22:33:4D
IP Address	192.168.1.1	Network Mask	255.255.255.0
DHCP Server	Enabled		
Lease Time	One day		
First IP Address	192.168.1.100	Last IP Address	192.168.1.200

3.1.3 Routing Table

This page shows basic information on the routing table, including the Destination, Gateway, Network Mask, HOPS and Network Interface.

Destination	Gateway	Network Mask	HOPS	Network Interface
192.168.1.0	0.0.0.0	255.255.255.0	0	br0

3.1.4 Local Log

This page shows logs of the router, including the System log, Warning lot and the Debug log. You can use the buttons on the right hand side to refresh, clear or download the displayed logs.

🔳 Log Type

Informative log OWarning log Oebug log

🗏 Log Content

		Refresh	Clear	Download	
Timestamp	Timestamp Content				
May 12 13:42:47	syslog.info syslogd started: B	usyBox v1.15	.0		
May 12 13:42:51	user.info kernel: ip_tables: (0	2000-2006	Netfilter Core	Team	
May 12 13:42:53	user.info kernel: ipt_CLUSTERIP: ClusterIP Version 0.8 loaded succes sfully				
May 12 13:42:54	user.info kernel: arp_tables: (C) 2002 David S. Miller				
May 12 13:42:57	user.info kernel: usbcore: registered new interface driver usbserial				
May 12 13:42:57	user.info kernel: USB Serial support registered for generic				
May 12 13:42:57	user.info kernel: usbcore: registered new interface driver usbserial_ generic				
May 12 13:42:57	user.info kernel: usbserial: U	SB Serial Driv	/er core		
May 12 13:42:58	user.info kernel: USB Serial support registered for GSM modem (1-p ort)				
May 12 13:42:58	user.info kernel: usbcore: reg	jistered new i	nterface drive	r option	
May 12 13:42:58	user.info kernel: option: v0.7	.2:USB Driver	for GSM mod	lems	
May 12 13:42:58	user.info kernel: USB Serial support registered for Vizzini USB serial port				

PREV

1

2 3 ... 5 6 7 NEXT

3.1.5 Traffic Statistics

This page shows network traffic information of the router, including the data sent and received over WAN and LAN. You can use the buttons on the right hand side to refresh or clear the traffic information.

 $\widehat{\mathbf{m}}$ STATUS > Traffic Statistics

			Refresh	Clear
ITraffic Of WAN				
Data Sent:	590 bytes	Data Reveived:	0 bytes	
ITraffic Of LAN				
Data Sent:	621874 bytes	Data Reveived:	471204 bytes	

3.1.6 Cloud Status

This page shows cloud server information of the router, including the Registration Status, Service Status, and Activated Time.

E Cloud Status

Not registered	
Disabled	
N/A	
	Not registered Disabled N/A

3.1.7 Connected Device

			Refresh
ID	IP Address	Host Name	MAC Address
1	192.168.1.100	CNXMDNIPC062	3C:97:0E:DE:7B:25

3.2 **Network**

You can set up networks, including the WAN Configurations, LAN Configurations, Storm Filtering, Static Routing Rules and Dynamic DNS.

WAN Configurations 3.2.1

This page is used for setting up the WAN (Wide Area Network), including the WAN Connection Mode, IP Allocation Method, IP Address, Network Mask, Gateway Address, Packet MTU and DNS.

☆ NETWORK > WAN Configurations

WAN Configurations	;
WAN Connection Mode	DHCP 🗸
IP Allocation Method	Dynamic \checkmark
IP Address	0.0.0.0
Network Mask	0.0.0.0
Gateway Address	0.0.0.0
Packet MTU	1500
(Don't change the settings	unless really need to)
Retrieve DNS Address By:	Dynamic \checkmark
Primary DNS	0.0.0.0
Secondary DNS	0.0.0.0
Auto Detect	Cloud service \checkmark
Save	Cancel

Description	Default		
WAN Connection Mode			
Your device can connect to the internet via the WAN port with a Dynamic IP or Static IP.			
 Static IP: Manually set up the IP address. 	DHCP		
Dynamic IP: DHCP (Dynamic Host Configuration Protocol) server on			
the network will assign an IP address to the DX router automatically.			
IP Allocation Method			
The IP Allocation Method is the same as the WAN Connection Mode that	DHCP		

Description	Default
 you have set. You can apply to different option by modifying the WAN Connection Mode. Dynamic: DHCP (Dynamic Host Configuration Protocol) server on the network will assign an IP address to the DX router automatically. Manual: Manually set up the IP address (Static). 	
IP Address	
Set up an IP address for your device to connect to the internet via the WAN port. It's configurable when the mode is set to Static.	0.0.0.0
Network Mask	
Set up the WAN network mask. It's configurable when the mode is set to Static.	0.0.0.0
Gateway Address	
Set up the gateway address. It's configurable when the mode is set to Static.	0.0.0.0
МТО	
Maximum Transmission Unit is the largest packet that can be transmitted over packet based networks.	1500
Retrieve DNS Address By	
The Retrieve DNS Address Method is the same as the WAN Connection Mode that you have set. You can apply to different option by modifying the WAN Connection Mode. DNS address can be retrieved by DHCP setup or manually set.	DHCP
 Dynamic: DHCP (Dynamic Host Configuration Protocol) server on the network will assign an DNS address to the DX router automatically. Manual: Manually set up the IP address (Static). 	
Primary DNS	
Set up the primary DNS. It's configurable when the mode is set to Static.	0.0.0.0
Secondary DNS	
Set up the secondary DNS. It's configurable when the mode is set to Static.	0.0.0.0
Auto Detect	
With two ways to detect the network connection automatically, users can choose between "PING" and "Cloud Service" or choose "Disable" to shut down this function.	Cloud Service
Target Address	
Set the IP/domain of the server that program will do a ping testing.	www.DIACloudSolutions. com

3.2.2 LAN Configurations

This page is used for setting up the LAN, including the Device Name, IP Address, Network Mask, and DHCP Server.

☆ NETWORK > LAN Configurations

LAN Configurations

Device Name	DX2300_8C8B
IP Address	192.168.5.5
Network Mask	255.255.255.0
DHCP Server	Enable \vee
Address Lease Time	One day 🗸 🗸
First IP Address	192.168.5. 100
Last IP Address	192.168.5. 200
STP	Disable \vee
PHY Auto Reset	Disable \vee

Cancel

Save

Description	Default
Device Name	
Set up a device name for your router. The name shall be composed of letters, numbers and underline, starting with a letter or number. The maximum string length is 32 bytes.	DX2300 + "_" + "the last four digits of Mac address"
IP Address	
Set up an IP address for your device.	192.168.5.5
Network Mask	
Set up the LAN network mask.	255.255.255.0
DHCP Server	
If DX router uses DHCP to assign IP addresses automatically on your network. You can specify the IP address range and lease time for the clients on your network. Once the DX router have bound the DIACloud and enabled the DIACloud DHCP the DHCP in DX router will be disabled automatically.	Enable
Address Lease Time	
To set up the address lease time so that a client doesn't hold an IP address indefinitely. It allows for a mechanism to gracefully reuse DHCP addresses.	One day

Description	Default		
Options here are 1 to 3 days.			
First IP Address			
To increase the number of addresses available to clients, you can change the Start Address.	192.168.5.100		
Last IP Address			
To increase the number of addresses available to clients, you can change the End Address.	192.168.5.200		
STP			
STP is a network protocol that builds a logical loop-free topology for Ethernet networks. The basic function of STP is to prevent bridge loops and the broadcast radiation that results from them. If this STP is enabled, the traffic usage will increase about 15Mbit in 24 hours.	Disable		
PHY Auto Reset			
Activate DIACloud DHCP after the account is bound. To determine whether LAN needs to be reset if DIACloud is manually reboot or reconnected due to unstable network.			
• Disable: Not allow LAN reset automatically.			
 Enable: Allow LAN to be reset which would cause a short period of disconnection between devices and DX LAN ports 	Disable		
A Notice:			
It is suggested to disable DIACloud DHCP function and assign IP addresses in manual mode.			

An example of operation: Confirm "PHY Auto Reset" is set as Disable.

	1.	Logged into www.diacloudsolutions.com
	2.	Click the secure tunnel and create a new network.
	3.	Enable the function to assign IP address
	4.	Log into DX webpage and bind your account to the DIACloud. Make sure if the LAN port is receiving the DHCP IP address from DIACloud.
Instruction	5.	Go to NETWORK -> LAN Configurations -> PHY Auto Reset and select Disable.
	6.	Connect the device to the LAN1 port.
	7.	Restart the Cloud service to see if the LAN1 is not trying to reconnect. (LAN1 should not be restarted.)
	8.	Connect your PC to LAN2 to ping LAN1 to see if the IP address of the LAN1 cannot communicate for a short time.

3.2.3 Storm Filtering

When storm filtering is enabled, the switch will permit only the allowed number of packets to forward during the period you set, and the following incoming packets will be discarded to avoid network traffic.

☆ NETWORK > Storm Filtering

When storm filtering is enabled, the switch will permit only the allowed packet numbers packets you setted to forward to other ports during the period, and the following incoming packets will be dropped !

Broadcast Packet Filtering	Disabled	\sim
Multicast Packet Filtering	Disabled	\sim
Unknown Destination Address Packet Filtering	Disabled	\sim
Period	800ms	\sim
Allowed Packet Number	8	\sim



Description	Default		
Broadcast Packet Filtering			
Enable or disable storm filtering function for broadcast packets. Condition to determine: Destination: FF:FF:FF:FF:FF;FF, protocols: DHCP \ ARP \ UDP	Disabled		
Multicast Packet Filtering			
Enable or disable storm filtering function for Multicast packets. Condition to determine: Destination: multicast MAC addresses 01-80-C2-XX-XX, 01-00-5E-XX-XX-XX and more. Protocols: IGMP Note: Conditions not include 01-80-C2-00-00(STP protocol)	Disabled		
Unknown Destination Address Packet Filtering			
Enable or disable storm filtering function for unknown destination address packets.	Disabled		
Period			
Set the time period of storm filtering with options: 800ms, 400ms, 200ms and 100ms.	800ms		
Allowed Packet Number			
Set the allowed packet number to process in a time period. Options are 8, 16, 32, 64 and 256.	8		

3.2.4 Static Routing Rules

This page is for setting up the Static Routing, including the Rule Name, Network Interface, Enabled, Destination IP, Network Mask, Gateway Address and Metric. Click the "Add A Rule" to add static routing rules.

☆ NETWORK > Static Routing Rules Add A Rule ID Enabled Name Destination Gateway **Network Interface** After clicking the "Add A Rule", you will see the following page. NETWORK > Static Routing Rules 🔳 Add A Rule Rule Name Network Interface WAN 🔻 Enabled Yes V Destination IP Network Mask Gateway Address 2 $(2 \sim 15)$ Metric Back Save

Description	Default
Rule Name	
Set up a name for your rule. The name shall be composed of letters, numbers and underline, starting with a letter or number. The maximum string length is 32 bytes.	N/A
Network Interface	
For a specific network destination address, select the network interface of the router for sending data package. Options are LAN and WAN.	WAN
Enabled	
Activate the static routing functionality.	Yes
Destination IP	
Set up a Destination IP address for your device.	N/A
Network Mask	
Set up the subnet mask corresponding to the destination network segment. If the final destination of the routing is a single host, please type in 255.255.255.255.	N/A
Gateway Address	
Set up the next-hop routing address.	N/A

Description	Default
Metric	
Set up the hops. The number of hops that are passed for reaching the destination address. One hop indicates passing one router passed. The range is 2~15.	2

3.2.5 Dynamic DNS

This page is used for setting up the Dynamic DNS Settings, including the Dynamic DNS, Service Provider, Domain User Name, Password, and the Refreshing Interval.

NETWORK > Dynamic DNS

Distant
www.DynDns.org 🔻
86400 (120~86400s)

Description	Default
Dynamic DNS	
Dynamic Host Configuration Protocol allows you to obtain an IP address automatically from your router. You can enable or disable this functionality.	Disable
Service Provider	
Select the dynamic domain service provider. Options are www.DynDNS.org and www.NOIP.com	www.DynDns.org
Domain	
The domain applied for to the corresponding dynamic domain service provider.	N/A
User Name	
The name of the user registered at the corresponding dynamic domain service provider.	N/A

Description	Default
Password	
The corresponding password to the registered user.	N/A
Refreshing Interval	
Set up the time for the router to update its public network IP from the dynamic domain service provider. The value range is 120~86400 sec.	86400

3.3 Firewall

You can set up firewall configurations, including the Firewall Settings, DMZ Settings, Port Forward, Port Trigger, URL Filter, MAC Filter, and IP Filter.

3.3.1 Firewall Settings

- 1. This page is used for setting up the basic firewall settings, including the SPI firewall switch, WAN Ping response, LAN SSH function and WAN SSH.
- 2. Users can also set up configuration via web browser by accessing the public IP address obtained from WAN port with port 80 or 502.

Use the MODBUS TCP Client tool and Server IP will be 123.123.123.1:502 Public IP address 123.123.123.1:502



Access with http://123.123.123.1:80 via Web browser to setup DX configuration



Public IP address 123.123.123.1:80



$\hat{\mathbf{m}}$ FIREWALL > Firewall Settings

Basic Firewall Settings	
Firewall	Enable \checkmark
WAN Ping	Not responded $ \smallsetminus $
LAN SSH	Enable \vee
WAN SSH	Disable \vee
Remote Access Port	80 502

Save Can

Description	Default
Firewall	
The SPI Firewall keeps track of the state of network connections travelling across it, protecting your Internet connection against Internet threats and Denial of Service (DoS).	Enable
WAN Ping	
It creates a filter that your router not to respond to Ping command and prevents other users on the internet from pinging your pc and gaining your IP address.	Not responded
LAN SSH	
Set up whether to allow LAN end to connect with the router via SSH.	Enable
WAN SSH	
Set up whether to allow WAN end to connect with the router via SSH.	Disable
Remote Access Port	
Users can obtain a public IP address through the WAN port and use the port 80 to go to the setting page of the device and use the port 502 to connect to the Modbus TCP Server.	
• Port 80: Access the configuration page of your device.	
• Port 502: External devices as MODBUS Clients connect to the MODBUS TCP Server of your device to read MODBUS slave devices.	Uncheck
Notice:	
Contact ISP or IT specialists in your company before obtain public IP address.	

3_



		ings
	🗏 Basic Firewall Setting	5
	Firewall	Enable ~
	WAN Ping	Not responded $ \smallsetminus $
Figure	LAN SSH	Enable \checkmark
	WAN SSH	Disable \checkmark
	Remote Access Port	80 502
		Save Cancel

3.3.2 DMZ Settings

This page is used for setting up the DMZ server.

MZ Server	Enable 🔻
MZ Host IP Address	

Description	Default
DMZ Server	
Demilitarized zone (DMZ) is a special segment of the local network reserved for servers accessible from the Internet, adding an additional layer of security.	Disable
DMZ Host IP Address	
Set up the IP address for the DMZ host.	N/A

3.3.3 Port Forward

This page is used for setting up the port forward, including configuring the Network Services, Service Name, Protocol, Public Port, Server Port, and Server IP Address.

1. Click the "Add A Portforward Rule" to add port forwarding entries to the router.

3-17

ID	Service Name	Protocol	Public Port	Server	Port	Server IP Addres
After	clicking the "Add A F	Portforward Ru	le″, you will see	the following	page.	
ĉΕ	IREWALL > Port I	Forward		·		
i = 1	Add A Portforwa	rd Rule				
				_		
Vetw	ork Services	C	ustomized •			
					i i	
Serv	ice Name					
Serv	ice Name	T	CP/UDP V			
Serv	ice Name	Ţ	CP/UDP •		11.000	24)
Serv Proto Publi	ice Name ocol c Port	T	CP/UDP ▼		(1~655	34)
Serv Proto Publi Serv	ice Name ocol c Port er Port	S	CP/UDP ▼ ingle port ▼		(1~655) (1~655)	34) 34)

Description	Default
Network Services	
Select the common network services. Refer to the following common service list for optional values.	Customized
Service Name	
Set up the service name for port forwarding. The name is composed of letters, numbers and underline, starting with a letter or number. The maximum string length is 32 bytes.	N/A
Protocol	
Set up the protocol type for port forwarding.	TCP/UDP
Public Port	
Set up the public port for port forwarding. The port range is 1~65534. A Public port should be less than or equal to the server port.	Single Port
Server Port	
Set up the server port for port forwarding. The port range is 1~65534. A server port should be greater than or equal to the public port. When the public port is set to a Single Port, the server port can only be set to a Single Port. When the public port is set to a Port Range, the server port can be set to a Single Port or a Port Range. And when the public port is set to a single port, all the port will be forwarded to ONE single port. Examples of different port forwarding settings:	Single Port

	Description			Default
1:1				
Public Port	Single port 🔹	1001	(1~65534)	
Server Port	Single port 🔻	80	(1~65534)	
N:1				
Public Port	A port range ▼ 1001	- 100	8 (1~65534)	
Server Port	Single port • 80	(1~6	5534)	
N:N				
Public Port	A port range v 1001	- 100)8 (1~65534)	
Server Port	A port range ▼ 1001	- 100)8 (1~65534)	
Server IP Address				
Set up the server IP ac	dress that applies to the port ma	apping rule.		192.168.1

Common Service List for Port Forwarding			
Service name	Protocol	Starting Port	Ending Port
Customized	TCP, UDP, TCP/UDP	1~65534	1~65534
FTP	TCP	20	21
HTTP	TCP	80	80
ICUII	TCP	23566	23566
IP_PHONE	TCP	6670	6670
NetMeeting	TCP	1720	1720
News	TCP	119	119
РРТР	TCP/UDP	1723	1723
Telnet	TCP	23	23
Quakell/III	TCP/UDP	27960	27960
Real-Audio	TCP	6970	7170

3.3.4 Port Trigger

This page is used for setting up the port trigger, including configuring the Service Name, Service User, Service Type, Trigger Port, Protocol Role, Begin Port, End Port, and Status.

Port triggering is port forwarding with an on/off switch for the ports that have been forwarded. Have data flown out of a trigger port or not by enabling or disabling this functionality. Set up the time for the Port Trigger Timeout and click "Save" to save the setting.

1. Click the "Add A Trigger Rule" to add port trigger entries to the router.

爺 FIREWALL > Port Trigger

Port ⁻	Trigger Disable 🔻 Po	rt Trigger Timeout 20	Minute Save	Add A	rigger Rule
ID	Service Name	Service Type	Inbound Connection	Service User	Status

2. After clicking the "Add A Trigger Rule", you will see the following page.

â.	FIRE	WALL	>	Port	Tria	aer

🗏 Add A Trigger Rule

Service Name	
Service User	Any address 🔹
Service Type	TCP •
Trigger Port	(1~65534)
Inbound Connection	
Protocol Role	TCP/UDP •
Begin Port	(1~65534)
End Port	(1~65534)
Status	Disabled v
	Save Back

Description	Default
Service Name	
Set up the service name for port triggering. The name is composed of letters, numbers and underline, starting with a letter or number. The maximum string length is 32 bytes.	N/A
Service User	-
Select the service user to apply the port triggering rule.	Any Address

Description	Default
Service Type	
Set up the protocol type for port triggering.	TCP
Triggering Port	
Set up the triggering port. The port range is 1~65534.	N/A
Inbound Connection	
Protocol Role	
Set up the protocol type for the inbound connection.	TCP/UDP
Begin port	
Set up the starting port for the inbound connection. The port range is 1~65534.	N/A
End Port	
Set up the ending port for the inbound connection. The port range is 1~65534.	N/A
Status	
Enable/disable the port triggering functionality.	Disabled

3.3.5 URL Filter

This page is used for setting up the URL Filter, including configuring the URL Address, LAN IP Address and Status.

URL Filter is used to block particular website from the local network. Select Enable/Disable to activate/deactivate this functionality. Click the "Add An URL Address" to block the URL.

URL Addr	ress Filter Disable 🔻 Save		Add An URL Address
ID	URL Address	LAN IP Address	Status

After clicking the "Add An URL Address", you will see the following page.

JRL Address	
AN IP Address	Any address 🔻
Status	Enabled •

Description	Default
URL Address	
Manually input the URL address that you'd like to block, for example www.baidu.com.	N/A
LAN IP Address	
Set up the LAN IP address that you'd like to block. Options are "Any Address", "Single Address" and "Address Range".	Any Address
Status	
Enable/disable the URL Filter functionality.	Enabled

3.3.6 MAC Filter

This page is used for setting up the MAC Filter, including configuring the MAC Address, Device Name and Status.

MAC Filter is used to block particular MAC address from the local network. Select Enable/Disable to activate/deactivate this functionality. Click the "Add A MAC Address" to block the MAC Address.

FIREWALL > MAC Address Filter

MAC Address F	ilter Disable 🔻	Save		Add A MAC Address
ID	MAC Ad	Idress	Device Name	Status

After clicking the "Add A MAC Address", you will see the following page.

FIREWALL > MAC Address Filter

🖩 Add A MAC Address

Enabled •	
	1
	Enabled •

Description	Default
MAC Address	
Manually input the MAC address that you'd like to block.	N/A
Device Name	
Set up the device name corresponding to the set MAC address.	N/A
Status	
Enable/disable the MAC Filter functionality.	Enabled

3.3.7 IP Filter

This page is used for setting up the IP Filter, including configuring the Source IP, Source Port, Destination IP, Destination Port, Protocol and Status.

IP Filter is used to block particular IP address from the local network. Select Enable/Disable to activate/deactivate this functionality. Click the "Add An IP Address" to block the IP Address.

ID	Source IP Address Range	Source Port Range	Range Of Destination IP Address	Range Of Destination Port	Protocol	Status	
IP A	ddress Filter Disable	▼ Save			Add An IP A	\ddress	

After clicking the "Add An IP Address", you will see the following page.

FIREWALL > IP Address Filter

🗏 Add An IP Address

Source Port	Any port
	Yany por
Destination IP	Any address
Destination Port	Any port
Protocol	TCP/UDP
Status	Enabled •

Description	Default
Source IP	
Set up the source IP.	Any Address
Source Port	
Set up the source port where the datagram came from.	Any port
Destination IP	
Set up the destination IP.	Any Address
Destination Port	
Set up the destination port where the datagram is going to.	Any port
Protocol	
Set up the protocol type for the IP Filter.	TCP/UDP
Status	
Enable/disable the URL Filter functionality.	Enabled

3.4 System

You can set up the system configurations, including the User Management, Time Zone Configurations, RS232, RS485, Modbus TCP, Log Settings, Firmware Upgrade, Backup & Restore, Scheduled Jobs, Network Diagnosis, System Reboot, Event Management, and Register Management.

3.4.1 User Management

You can change the administrator password here. The password must be a combination of 5 to 12 characters, numbers and/or underline symbols.

Input the original password.

numerals 0-9 and underline.

Confirm Password

Session Timeout

New Password

🗏 User Management				
Old Password				
New Password				
The password must be a con	nbination of 5 to 12 char	acters,numbers and unde	erline marks	
Confirm Password				
			Savo	Canaal
			Save	Gancer
🗏 Session Timeout Setti	ng			
Session Timeout:	30	(10-1440 min)	Save	
	Description		Defau	lt
Old Password				

Input the new password you'd like to use. The password length should be 5-12 digits and is composed of lowercase letters, uppercase letters (case sensitive),

Again input the password you'd like to use to double confirm there is no typo.

Session timeout is an expired time limit for a logged in user which as been

inactive for a period of time. Setting range is from 10 to 1440 minutes

admin

N/A

A/A

3.4.2 Time Zone Configurations

You can change the current time of the device. Use the dropdown list to select the correct time zone for your device.

The current time of device 2019-08-27 17:10:37

Local PC Time	2019-08-27 17:10:40	Set Local PC Time
Time Zone Settings	(GMT+08:00) Beijing, Chongqing, Hong Kong, Urumqi	~

Description	Default
The current time of device	
Here shows the current time of your device.	N/A
Set Local PC Time	
Configure time and date settings to be synchronized with the connected PC.	N/A
Time Zone Setting	
Select the operating time zone of your device: GMT-12:00 - GMT+13:00.	GMT+08:00

	Example: Sync time between the device and the connected PC.		
Instruction	 Enter DX webpa Go to "SYSTEM Click "Set Local After a confirmat complete synchr 	ige. -> Time Zone Settings" PC Time" tion message prompted, click yes and reboo ronization.	t the device to
Figure	SYSTEM > Time Zone Sett The current time of dev Local PC Time Time Zone Settings	tings vice 2020-04-23 17:42:55 2020-04-23 17:42:54 (GMT+08:00) Beljing, Chongqing, Hong Kong, Urumqi	Set Local PC Time

3.4.3 RS232

RS-232 supports 7 working modes: Transparent mode, Slave mode, Master mode, Serial Server-TCP Server, Serial Server-TCP Client, Serial Server-UDP Client and MC master mode.

This section provides information of specific RS232 port parameters under different working modes. The basic parameters are presented in the table below.

Description	Default
Working Mode	
Select the working mode for the current active serial port.	Close
Baud Rate	
Set up the baud rate for the serial port. Options are 2400, 4800, 9600, 19200, 38400, 57600 and 115200.	9600
Data Bits	
Set up the data bits for the serial port. Options are 7 and 8. It must be set to 8 when communication mode is Modbus RTU.	8
Stop Bits	
Set up the stop bits for the serial port. Options are 1 and 2.	1
Parity Bits	
Set up the parity bits for the serial port. Options are None, Odd and Even.	None
Flow Control	
Set up the flow control. Options are None, XON, XOFF, RTS, and CTS.	None

• Transparent mode

When RS-232 is under transparent mode, users can debug devices and upload/ download data remotely by creating virtual serial ports via DIACom.

III RS232

Working Mode	Transparent mode	e 🗸		
Baud Rate	9600 🗸			
Data Bits	8 ~			
Stop Bits	1 ~			
Parity Bits	None \checkmark			
Flow Control	None 🗸			
		Save	Cancel	

Slave mode

This mode is for the master device to perform the read/ write tasks on the open register of DX router to achieve bidirectional data transmission.

≣ RS232

Working Mode	Slave mode	\sim
Baud Rate	9600 🗸	
Data Bits	8 ~	
Stop Bits	1 ~	
Parity Bits	None \checkmark	
Flow Control	None 🗸	
Slave ID	1	
Mode	Modbus RTU $$	
Timeout	200 (ms)

Description	Default
Slave ID	
Set up the MODBUS ID. The value is between 1 and 247.	1
Mode	
Set up the communication mode for the device. Device support Modbus RTU and Modbus ASCII	Modbus RTU
Timeout	
Set up the timeout timer from 200ms to 5000ms. If the set value is out of range, it will be automatically changed to its maximum or minimum value.	200ms

Save Cancel

Master mode

In this mode, it is allowable for DX router to perform the read/ write tasks on the open register of the slave device via RS-232 to achieve bidirectional data transmission.

Working	Mode	M	aster mode	\sim										
Baud Ra	te	96	600 V											
Data Bit	5	8	\sim											
Stop Bits	5	1	\sim											
Parity Bi	ts	N	one \vee											
Flow Cor	ntrol	N	one 🗸											
Slave ID		1												
Mode		M	odbus RTU 🗸 🗸											
Timeout		20	0	(ms)										
Read/\	Write Configur	ation												
Scan Int	erval	30	000	(ms)										
When co	ommunicate with for register D0.	PLC of D	elta, the starting a	address ca	n be set as	the inter	nal register num	ber. For e	example,					
The acc	eptable address	range of t	this device is: \$0-9	\$1535 or \$	2048-\$409	5 or M0-I	м511.							
	Add Ma	ppings	Delete All Mappir	ngs Ex	kport Configu	re List	Import Configur	Add Mappings Delete All Mappings Export Configure List Import Configure List						
					_									
					浏览		D !							
Row Numbe	er Read/Write	Slave ID	Controller	Address Type	浏览 Slave Starting Address	Bit	Device Starting Address	Length (1-123)	Operation					
Row Numbe	er Read/Write	Slave ID 1	Controller Delta DVP PLC V	Address Type D ~	浏览 Slave Starting Address	Bit	Device Starting Address \$	Length (1-123)	Operation					
Row Numbe	Read/Write	Slave ID 1	Controller Delta DVP PLC ~ S	Address Type D ~	浏览 Slave Starting Address	Bit	Device Starting Address \$	Length (1-123)	Operation + -					
Row Numbe	Read/Write	Slave ID 1	Controller Delta DVP PLC ~ S Description	Address Type D ~	浏览 Slave Starting Address Cancel	Bit	Device Starting Address \$ Default	Length (1-123)	Operation + -					
Row Numbe	Per Read/Write Read/Write D	Slave ID 1	Controller Delta DVP PLC ~ S Description	Address Type D ~	浏览 Slave Starting Address Cancel	Bit 0	Device Starting Address \$ Default	Length (1-123)	Operation + -					
Row Number 1 Slave II Set up t	Read/Write Read/Write D	Slave ID 1	Controller Delta DVP PLC ~ S Description	Address Type D ~ Save	浏览 Slave Starting Address Cancel	Bit 0	Device Starting Address \$ Default	Length (1-123)	Operation + -					
Row Numbe	Read/Write Read/Write Note: Note:	Slave ID 1	Controller Delta DVP PLC ~ S Description uter. Invalid in Ma	Address Type D V Save	浏览 Slave Starting Address Cancel	Bit 0	Device Starting Address \$ Default	Length (1-123)	Operation + -					
Row Number 1 Slave II Set up t Mode Set the Modbus	er Read/Write Read/Write ✓ D the MODBUS ID communication is	Slave ID 1	Controller Delta DVP PLC ~ S Description uter. Invalid in Ma the device. Device	Address Type D ~ Save	浏览 Slave Starting Address Cancel	Bit 0	Device Starting Address \$ Default 1 Modbus RTU	Length (1-123)	Operation + -					
Row Number 1 Slave II Set up t Mode Set the Modbus	Read/Write Read/Write ✓	Slave ID 1	Controller Delta DVP PLC ~ S Description uter. Invalid in Ma the device. Device	Address Type D V Save		Bit 0	Device Starting Address \$ Default 1 Modbus RTU	Length (1-123)	Operation + -					
Row Number 1 Slave II Set up t Mode Set the Modbus Timeou	er Read/Write Read/Write ✓ Read/Write ✓ D the MODBUS ID communication is ASCII. It timeout timer fro automatically cha	Slave ID 1 for DX ro mode for t anged to it	Controller Delta DVP PLC ~ S Description uter. Invalid in Ma the device. Device	Address Type D ~ Save ster mode e support N set value nimum val	浏览 Slave Starting Address Cancel	Bit 0 J and ge, it	Device Starting Address \$ Default 1 1 Modbus RTU 200ms	Length (1-123)	Operation					
Row Number 1 Slave II Set up t Mode Set the Modbus Timeou Set the will be a Scan In	er Read/Write Read/Write ✓ Read/Write ✓ D the MODBUS ID communication is ASCII. it timeout timer fro automatically cha hterval	Slave ID 1 for DX ro mode for t m 200ms anged to it	Controller Delta DVP PLC ~ S Description uter. Invalid in Ma the device. Device to 5000ms. If the ts maximum or min	Address Type D ~ Save ster mode	刘览 Slave Starting Address Cancel	Bit 0 J and ge, it	Device Starting Address \$ Default 1 Modbus RTU 200ms	Length (1-123)	Operation + -					

Description	Default
Add Mappings	- -
Click the button to add mappings. After creating a mapping between IP addresses of slave device and DX router under the user's configuration, the system will collect data from the slave device.	N/A
Delete All Mappings	
Delete all the existing mapping under the master mode of RS-232.	N/A
Export Configure List	
Export all the mapping and save as a file in the local PC.	N/A
Import Configure List	
This function supports communication interfaces including RS232/RS485/MODBUS TC/MC/SIEMEN TCP, which share a total of 600 mapping web addresses.	
Notice:	
• Each communication interface can import up to 600 mapping addresses. However, if RS232 has been mapped to 10 addresses and another 600 mapping addresses are imported, the 10 mapping address imported previously will be covered.	N/A
 If 10 addresses has been mapping to RS232, there would be only 590 addresses left for RS485/MODBUS/TCP communication interfaces to import. A warning message will be displayed if exceeds the limit. 	
Read/Write	
 Set up the access permissions for the mapped register address; Read-only: The device regular read data from appointed registers in the slave, but will not update the data to the slave Write-only: The device updates the data to the slave when the registers values were changed, but will not read the data from the slave Read/write: The device regular read data from appointed registers in the slave, will update the data to the slave when the registers values are changed. 	Read/Write
Slave ID	
Set up the corresponding slave communication port. The value is between 1 and 247.	1
Controller	1
 In master mode, device types options are: Delta PLC: Use this option for Delta DVP / AH / AS series PLCs Other: Use this option for non-Delta PLCs. HEX means hexadecimal address; DEC means decimal address. 	Delta DVP PLC

		Description	Default
Ad	dres	s Туре	
In m con	naste trollei	r mode, the address type would changes with different options of type:	
•	Del M/S	ta PLC: address types would be D/M/S/X/Y, which D is a word type and /X/Y are of bit type.	
•	Oth	er: Address type is 0x/1x/3x/4x/Swap	
	a)	0x: Coils(Modbus function code: 01/05), read-write.	
	b)	1x: Discrete Inputs(Modbus function code: 02), read only.	D
	c)	3x: Input Registers (Modbus function code: 04), read only.	
	d)	4x: Holding Registers (Modbus function code: 03/16), read-write.	
	e)	Swap: If using "double words" to read/write "holding registers", before reading or writing, the values in Hi Word and Low Word will be swapped first.	
Sla	ave S	tarting Address (decimal)	
Se •	t up t De D Ot l H	he slave starting address for read/write the registers in a PLC. Ita PLC: Enter the internal D register number. If you need to read / write 0, please enter 0 here. her: Enter the Hexadecimal or Decimal actual address. For example: olding Register: 400100, take 0100 (decimal) that is 64 (hex).	N/A
Bit	:		
Fo En Ad	r the ter th dress	X/Y type of Delta AH/AS series, the address input format is 0.0~X.15. e values before decimal point in the input field of Slave Starting s; values after decimal point should be entered in the input field of Bit.	N/A
De	vice	Starting Address (decimal)	
Se \$2 be	t up t 048 te ginnir	he device starting address (decimal, word-type input range is from o \$4095; bit-type input range is from M0 to M511). Must start at the ng of a Device Starting Address with a "\$" or "M".	N/A
Le	ngth	(1-123)	
Set star	the le ting a	ength which is the number of continuous addresses followed by the address which will be read or write, ranging from 1 to 123.	N/A
Op	erati	on	
Cli	ck the	e +/- button to add mapping or delete mapping.	N/A
Ed	it		
Cli	ck an	item of register mapping forms that can be edited.	N/A

• Serial Server-TCP Server

In this working mode, DX series routers working as TCP servers receive data packets from clients, then send to RS-232 after parsing.

III RS232

Working Mode	Serial Server - TCP Server	\sim
Baud Rate	9600 ~	
Data Bits	8 ~	
Stop Bits	1 ~	
Parity Bits	None \vee	
Flow Control	None ~	
TCP Alive Check Time	7	(0-99 min)
Listening Port	16000]
Packing Length	0	(0-1024)
Force Transmit	0	(0-65535 ms)

Save	Cancel

Description	Default
TCP Alive Check Time	
Setting how long TCP activity keep idle, then the TCP connection will be drop. Input range is from 0 to 99 minutes. 0 means will never drop it.	7
Listening Port	
Set up the listening port in server.	16000
Packing Length	
Setting the length of packet, packet will be transmitted when the size reaches the values. Input range is from 0 to 1024 byte. 0 means will transmit at once when received the data.	0
Force Transmit	
Setting how long the program waiting, then transmit the packet. Input range is from 0 to 65535 millisecond. 0 means will never force to transmit.	0

• Serial Server-TCP Client

Under this mode, DX routers will be clients of device servers to send data with a TCP connection.

III RS232

Working Mode	Serial Server - TCP Client	\sim	
Baud Rate	9600 ~		
Data Bits	8 ~		
Stop Bits	1 ~		
Parity Bits	None \checkmark		
Flow Control	None 🗸		
TCP Alive Check Time	7	(0-99 r	nin)
Destination IP Address1	192.168.5.100	Port	4001
Destination IP Address2		Port	4002
Destination IP Address3		Port	4003
Destination IP Address4		Port	4004
Designated Local Port1	14001		
Designated Local Port2	14002		
Designated Local Port3	14003		
Designated Local Port4	14004		
Packing Length	0	(0-102	4)
Force Transmit	0	(0-655	35 ms)

Save

Description	Default
TCP Alive Check Time	
Configure the duration of idle state before disconnect TCP automatically. Selectable values: 0~99	
-0 : Never shut off TCP connection due to idle state.	7
-1~99 : Shut off when the duration of idle state reaches the setting value.	
Destination IP address and Port	
Set up destination IP addresses and ports. (Default:4001~4004, configurable) IP addresses and ports cannot be duplicated with a maximum of 4 servers allowed to be connected at the same time.	Default port 4001~4004

Description	Default
Designated local port	
Set up the local port for transmission.	14001~14004
Packing Length	
Setting the length of packet, packet will be transmitted when the size reaches the values. Input range is from 0 to 1024 byte. 0 means will transmit at once when received the data.	0
Force Transmit	-
Configure the length of time awaiting to transmit a data packet forcibly, ranging 0~65535ms. When reaches the setting of time duration or the length of accumulated data, the data would be transmitted immediately. If set as 0, no data packet would be sent.	0

• Serial Server-UDP Client

Under this mode, DX routers will be clients of device servers to send data with a UDP connection.

III RS232			
Working Mode	Serial Server - UI	DP Client 🗸	
Baud Rate	9600 ~		
Data Bits	8 ~		
Stop Bits	1 ~		
Parity Bits	None \checkmark		
Flow Control	None 🗸		
	Begin	End	port
Destination IP Address1			: 6001
Destination IP Address2			: 6002
Destination IP Address3			: 6003
Destination IP Address4			: 6004
Local Listen Port	15000		
Packing Length	0	(0-1024)	
Force Transmit	0	(0-65535 ms)	

Save Cancel

Description	Default
Destination IP address and Port	
Set the destination IP addresses and ports. (Default:6001~6004, configurable) IP addresses and ports cannot be duplicated with a maximum of 4 servers allowed to be connected at the same time. Each server can support up to 99 addresses, counting from the starting address.	Default port 6001~6004
Local listen port	
Set up the local port for transmission.	15000
Packing Length	
Setting the length of packet, packet will be transmitted when the size reaches the values. Input range is from 0 to 1024 byte. 0 means will transmit at once when received the data.	0
Force Transmit	
Set the length of time awaiting to transmit a data packet forcibly, ranging 0~65535ms. When reaches the setting of time duration or the length of accumulated data, the data would be transmitted immediately. If set as 0, no data packet would be sent.	0

٠ MC master mode

When RS232 is in MC master mode, DX series routers can perform the read/ write tasks on the slave device of Mitsubishi PLC FX series via RS232 to achieve bidirectional data transmission.

III RS232						
Working Mode	MC master mode	\sim				
Baud Rate	9600 ~					
Data Bits	7 ~					
Stop Bits	1 ~					
Parity Bits	Even ∨					
Flow Control	None 🗸					
Slave ID	0]				
Mode	MC ASCII \smallsetminus					
Timeout	200	(ms)				
Read/Write Configuration						
Scan Interval	30000	(ms)				
The acceptable address range of this device is: \$0-\$1535 or \$2048-\$4095 or M0-M511.						
Add Mappings	Delete All Mappings	Export Configure	List	Import Configure	e List	
		浏览				
		Clave		Dovico		

Mode	MC ASCII \sim	
Timeout	200	(ms)
Read/Write Config	uration	

Scan Interval	30000	(ms)
	C	

	Add Mappings		Delete All Mapping	s Export Configure		e List	Import Configure List		
Row Number	Read/Write	Slave ID	Controller	Address Type	Slave Starting Address	Bit	Device Starting Address	Length (1-64)	Operation
1	Read/Write \vee	0	MITSUBISHI PLC \sim	D ∨		0	\$		+ -

Description	Default	
Slave ID		
Set up the MODBUS ID for DX router. Invalid in MC Master mode.	0	
Mode		
It's fixed to "MC ASCII" in MC master mode.	MC ASCII	
Timeout		
Set the timeout timer from 200ms to 5000ms according to the actual situation. If the set value is out of range, it will be automatically changed to its maximum or minimum value.	200ms	
Scan Interval		
Set up the time for scan interval, ranging from 50ms to 60000ms.	30000ms	
Add Mappings		
Click the button to add mappings. After creating a mapping between IP addresses of slave device and DX router under the user's configuration, the system will collect data from the slave device.	N/A	
Delete All Mappings	1	
Delete all the existing mapping under the master mode of RS-232.	N/A	
Export Configure List		
Export all the mapping and save as a file in the local PC.	N/A	
Import Configure List	I	
 This function supports communication interfaces including RS232/RS485/MODBUS TC/MC/SIEMEN TCP, which share a total of 600 mapping web addresses. Notice: Each communication interface can import up to 600 mapping addresses. However, if RS232 has been mapped to 10 addresses and another 600 mapping addresses are imported, the 10 mapping address imported previously will be covered. If 10 addresses has been mapping to RS232, there would be only 590 addresses left for other communication interfaces to import. A warning message will be displayed if exceeds the limit. 	N/A	
Read/Write	1	
 Set up the access permissions for the mapped register address; Read-only: The device regular read data from appointed registers in the slave, but will not update the data to the slave Write-only: The device updates the data to the slave when the registers values were changed, but will not read the data from the slave Read/write: The device regular read data from appointed registers in the slave, will update the data to the slave when the registers values are changed. 	Read/Write	
Slave ID	1	
It's fixed to 0 in MC master mode.	0	
Description	Default	
---	-------------------	
Controller		
It's fixed to "MITSUBISHI PLC" in MC master mode.	MITSUBISHI PLC	
Address Type		
Address types would be D/M/S/X/Y, which D is a word type and M/S/X/Y are bit types.	D	
Slave Starting Address (decimal)		
Set the slave starting address for the registers under read/write task, inputting the number of the internal D register. (Input 0 for D0)	N/A	
Bit		
Invalid under MC master mode.	N/A	
Device Starting Address (decimal)		
Set up the device starting address (decimal, input range is from \$2048 to \$4095 for word type data, input range is from M0 to M511 for bit type data). \$ or M specifies that the match must start at the beginning of a Device Starting Address.	N/A	
Length		
Set up the number of the continuous address followed by the default mapped address will be read or write. Input range is from 1 to 64.	N/A	
Operation		
Click the +/- button to add mapping or delete mapping.	N/A	
Edit		
Click an item of register mapping forms that can be edited.	N/A	

3.4.4 RS485

RS-485 supports 6 working modes: Transparent mode, Slave mode, Master mode, Serial Server-TCP Server, Serial Server-TCP Client and Serial Server-UDP Client. This section provides information of specific RS-485 port parameters under different working modes. The basic parameters are presented in the table below.

Description	Default
Working Mode	
Select the working mode for the current active serial port.	Close
Baud Rate	
Set up the baud rate for the serial port. Options are 2400, 4800, 9600, 19200, 38400, 57600 and 115200.	9600
Data Bits	
Set port data bits as 7 or 8. When operating in Modbus RTU mode, the value can only be set as 8.	8
Stop Bits	
Set up the stop bits for the serial port. Options are 1 and 2.	1

Description	Default
Parity Bits	
Set up the parity bits for the serial port. Options are None, Odd and Even.	None

• Transparent mode

When RS-485 is under transparent mode, users can debug devices and upload/ download data remotely by creating virtual serial ports via DIACom.

RS485	
Working Mode	Transparent mode \checkmark
Baud Rate	9600 🗸
Data Bits	8 ~
Stop Bits	1 ~
Parity Bits	None \checkmark
	Save Cancel

Slave mode

This mode is for the master device to perform the read/ write tasks on the open register of DX routers to achieve bidirectional data transmission.

III RS485	
Working Mode	Slave mode 🗸
Baud Rate	9600 🗸
Data Bits	8 ~
Stop Bits	1 ~
Parity Bits	None \checkmark
Slave ID	1
Mode	Modbus RTU $$
Timeout	200 (ms)
	Save Cancel

3

Description	Default
Slave ID	
Set up the MODBUS ID. The value is between 1 and 247.	1
Mode	
Set up the communication mode for the device. Device support Modbus RTU and Modbus ASCII	Modbus RTU
Timeout	
Set up the timeout timer from 200ms to 5000ms. If the set value is out of range, it will be automatically changed to its maximum or minimum value.	200ms

Master mode

In this mode, it is allowable for DX router to perform the read/ write tasks on the slave device via an RS-485 connection to achieve bidirectional data transmission.

RS485	
Working Mode	Master mode 🗸
Baud Rate	9600 ~
Data Bits	8 ~
Stop Bits	1~
Parity Bits	None \checkmark
Slave ID	1
Mode	Modbus RTU \sim
Timeout	200 (ms)
Read/Write Configuration	

Scan Interval 30000 (ms)

When communicate with PLC of Delta, the starting address can be set as the internal register number. For example, input 0 for register D0.

The acceptable address range of this device is: \$0-\$1535 or \$2048-\$4095 or M0-M511.

	Add Mappings		Delete All Mappin	igs Ex	Export Configure List		Import Configure List		
Row Number	Read/Write	Slave ID	Controller	Address Type	Slave Starting Address	Bit	Device Starting Address	Length (1-123)	Operation
1	Read/Write \vee	1	Delta DVP PLC \sim	D ~		0	\$		+ -



3-38

Description	Default
Slave ID	
Set up the MODBUS ID for DX router. Invalid in Master mode.	1
Mode	
Set up the communication mode for the device. Device support Modbus RTU and Modbus ASCII.	Modbus RTU
Timeout	
Set up the timeout timer from 200ms to 5000ms. If the set value is out of range, it will be automatically changed to its maximum or minimum value.	200ms
Scan Interval	
Set up the time for scan interval, ranging from 50ms to 60000ms.	30000ms
Add Mappings	
Click the button to add mappings. After creating a mapping between IP addresses of slave device and DX router under the user's configuration, the system will collect data from the slave device.	N/A
Delete All Mappings	1
Delete all the existing mapping under the master mode of RS-485.	N/A
Export Configure List	1
Export all the mapping and save as a file in the local PC.	N/A
Import Configure List	1
 This function supports communication interfaces including RS232/RS485/MODBUS TC/MC/SIEMEN TCP, which share a total of 600 mapping web addresses. Notice: Each communication interface can import up to 600 mapping addresses. However, if RS485 has been mapped to 10 addresses and another 600 mapping addresses are imported, the 10 mapping address imported previously will be covered. If 10 addresses has been mapping to RS485, there would be only 590 addresses left for other communication interfaces to import. A warning message will be displayed if exceeds the limit. 	N/A
Read/Write	1
 Set up the access permissions for the mapped register address; Read-only: The device regular read data from appointed registers in the slave, but will not update the data to the slave Write-only: The device updates the data to the slave when the registers values were changed, but will not read the data from the slave Read/write: The device regular read data from appointed registers in the slave, will update the data to the slave when the registers values are changed. 	Read/Write
Slave ID	
Set up the corresponding slave communication port. The value is between 1 and 247.	1

	Description	Default		
Cont	roller			
In ma ● ●	Delta DVP PLC			
Addr	ress Type			
In mas contro	ster mode, the address type would changes with different options of ller type.:			
• [N	Delta PLC: address types would be D/M/S/X/Y, which D is a word type and <i>M</i> /S/X/Y are of bit type.			
• (Other: Address type is 0x/1x/3x/4x/Swap			
6	a) 0x: Coils(Modbus function code: 01/05), read-write.			
Ł	 1x: Discrete Inputs(Modbus function code: 02), read only. 	D		
C	c) 3x: Input Registers (Modbus function code: 04), read only.			
c	4x: Holding Registers (Modbus function code: 03/16), read-write.			
8	A) Swap: If using "double words" to read/write "holding registers", before reading or writing, the values in Hi Word and Low Word will be swapped first.			
Slave	e Starting Address (decimal)			
Set u ●	N/A			
Bit				
For the X/Y type of Delta AH/AS series, the address input format is 0.0~X.15. Enter the values before decimal point in the input field of Slave Starting Address, while values after decimal point should be entered in the input field of Bit.				
Devi	ce Starting Address (decimal)			
Set up the device starting address (decimal, input range is from \$2048 to \$4095). Bit type range is M0~M511. The beginning of a Device Starting Address must starts with a "\$" or "M".N/A				
Length (1-123)				
Set up the number of the continuous address followed by the default mapped address will be read or write. Input range is from 1 to 64.				
Operation				
Click	the +/- button to add mapping or delete mapping.	N/A		
Edit				
Click	an item of register mapping forms that can be edited.	N/A		

Cancel

Save

• Serial Server-TCP Server

In this working mode, DX series routers working as TCP servers receive data packets from clients, then send to RS-485 after parsing.

RS485		
Working Mode	Serial Server - TCP Server	\sim
Baud Rate	9600 🗸	
Data Bits	8 ~	
Stop Bits	1 ~	
Parity Bits	None \checkmark	
TCP Alive Check Time	7	(0-99 min)
Listening Port	16000	
Packing Length	0	(0-1024)
Force Transmit	0	(0-65535 ms)

Description	Default
TCP Alive Check Time	
Configure the duration of the idle state before disconnect TCP automatically. Selectable values: 0~99	
-0 : Never shut off TCP connection due to idle state.	7
-1~99: Disconnect TCP once the duration reaches the setting value.	
Listening Port	
Set the listening port of the server.	16000
Packing Length	
Set the length of the accumulated data for packets sending, ranging 0~1024 bytes. Set as 0 for real-time data transmission.	0
Force Transmit	
Set the length of time awaiting to transmit a data packet, ranging 0~65535 ms. When reaches the setting of time duration or the length of accumulated data, the data would be transmitted immediately. If set as 0, no data packet would be sent.	0

• Serial Server-TCP Client

Under this mode, DX routers will be clients of device servers to send data with a TCP connection.

:=	D	C	Л	O	5
	ĸ	3	4	o	J

Working Mode	Serial Server - TCP Client	\sim	
Baud Rate	9600 ~		
Data Bits	8 ~		
Stop Bits	1 ~		
Parity Bits	None \checkmark		
TCP Alive Check Time	7	(0-99 r	nin)
Destination IP Address1	192.168.5.100	Port	4001
Destination IP Address2		Port	4002
Destination IP Address3		Port	4003
Destination IP Address4		Port	4004
Designated Local Port1	14001]	
Designated Local Port2	14002]	
Designated Local Port3	14003]	
Designated Local Port4	14004]	
Packing Length	0	(0-102-	4)
Force Transmit	0	(0-655	35 ms)

Save Cancel

Description	Default
TCP Alive Check Time	
Configure the duration of the idle state before disconnect TCP automatically. Selectable values: 0~99 -0 : Never shut off TCP connection due to idle state.	7
-1~99: Disconnect TCP once the duration reaches the setting value.	
Destination IP address and Port	-
Set the destination IP addresses and ports. (Default:4001~4004, configurable) IP addresses and ports cannot be duplicated with a maximum of 4 servers allowed	4001~4004

Description	Default
to be connected at the same time.	
Designated local port	
Set local ports for your device.	14001~14004
Packing Length	
Set the length of the accumulated data for packets sending, ranging 0~1024 bytes. Set as 0 for real-time data transmission.	0
Force Transmit	
Set the length of time awaiting to transmit a data packet, ranging 0~65535 ms. When reaches the setting of time duration or the length of accumulated data, the data would be transmitted immediately. If set as 0, no data packet would be sent.	0

Serial Server-UDP Client •

Under this mode, DX routers will be clients of device servers to send data with a UDP connection.

ERS485			
Working Mode	Serial Server - U	DP Client 🗸	
Baud Rate	9600 🗸		
Data Bits	8 ~		
Stop Bits	1 ~		
Parity Bits	None \checkmark		
	Begin	End	port
Destination IP Address1			: 6001
Destination IP Address2			: 6002
Destination IP Address3			: 6003
Destination IP Address4			: 6004
Local Listen Port	15000		
Packing Length	0	(0-1024)	
Force Transmit	0	(0-65535 ms)	

Cancel

Description	Default
Destination IP address and Port	
Set the destination IP addresses and ports. (Default:6001~6004, configurable) IP addresses and ports cannot be duplicated with a maximum of 4 servers allowed to be connected under UDP at the same time. Each server can support up to 99 addresses, counting from the starting address.	6001~6004
Local listen port	
Set the local listen port for your device.	15000
Packing Length	
Set the length of the accumulated data for packets sending, ranging 0~1024 bytes. Set as 0 for real-time data transmission.	0
Force Transmit	
Set the length of time awaiting to transmit a data packet, ranging 0~65535 ms. When reaches the setting of time duration or the length of accumulated data, the data would be transmitted immediately. If set as 0, no data packet would be sent.	0

3.4.5 Modbus TCP

This page allows users to set whether to enable Modbus TCP client mode and set relevant parameters.

🖩 Modbus	тср				
Working Mod	e M	Nodbus TCP Server+Client \vee	Confirm		
*32 modl	*32 modbus TCP servers supported at most				Add Server
Row Number	Server IP	Server Port	Response Timeout(ms)	Scan Interval(ms)	Operation

Modbus TCP Client Setting										
Server IP										
Server Po	rt	5)2							
Response	Timeout	30	00	(ms)						
Read/W	rite Configur	ation								
Scan Inter	rval	3	0000	(ms)						
When cor	nmunicate with or register D0.	n PLC of [Delta, the starting a	address ca	in be set as	the inter	nal registe	r num	ber. For e	xample,
The accep	ptable address	range of	this device is: \$0-\$	1535 or \$	\$2048-\$4095	5 or M0-	M511.			
Make sur original s	e that the serve tate.	er alread	y exists before imp	orting, otl	nerwise the i	mportin	g is invalid	and it	t will retur	n to the
-	Add Ma	ppings	Delete All Mapping	gs Ex	port Configur	e List	Import Co	onfigure	e List	
Row Number	Read/Write	Slave ID	Controller	Address Type	Slave Starting Address	Bit	Devie Starti Addre	ce ng ess	Length (1-123)	Operation
1	Read/Write \vee	1	Delta DVP PLC \sim	D \sim		0	\$			+ -
			S	ave	Cancel				Default	
			Description						Delauli	<u> </u>
• Mo to • Mo w di	 Modbus TCP Server: Only Modbus TCP server works. And supports up to 32 Client to connect. Modbus TCP Server+Client: Modbus TCP server + Modbus TCP client work at the same time. MODBUS TCP Client supports to connect to 32 different servers at most. 						СР			
Server	IP									
Set up t	he IP address	s of a Pl	_C in the Modbus	S TCP CI	ient mode				N/A	
Server	Port									
Set up t	he server por	t of a Pl	C in the Modbus	S TCP CI	ient mode				502	
Response Timeout										
Set up the timeout timer from 50ms to 10000ms. If the set value is out of range, it will be automatically changed to its maximum or minimum value. The default300is 300ms.300										
Scan Interval										
Set up the time for scan interval, ranging from 50ms to 60000ms; the default is 3000ms.										
Add Ma	ppings									
Click the address system	e button to ad es of slave de will collect da	ld mapp evice ar ta from	ings. After creatir d DX router unde the slave device.	ng a map er the us	oping betwe er's configu	een IP uration,	the		N/A	
Delete All Mappings										

N/A

	Description	Default			
Ex	port Configure List				
Expo	ort all the mapping and save as a file in the local PC.	N/A			
Imp	port Configure List	I			
This M ac	function supports communication interfaces including RS232/ RS485/ ODBUS TC/ MC/ SIEMEN TCP, which share a total of 600 mapping web ddresses.				
	Notice:				
•	Each communication interface can import up to 600 mapping addresses. However, if RS232 has been mapped to 10 addresses and another 600 mapping addresses are imported, the 10 mapping address imported previously will be covered. If 10 addresses has been mapping to RS232, there would be only 590 addresses left for other communication interfaces to import. A warning message will be displayed if exceeds the limit.	N/A			
Rea	ad/Write	<u> </u>			
Set ●	up the access permissions for the mapped register address; Read-only: The device regular read data from appointed registers in the slave, but will not update the data to the slave				
•	 Write-only: The device updates the data to the slave when the registers values were changed, but will not read the data from the slave Read/write: The device regular read data from appointed registers in the slave, will update the data to the slave when the registers values are changed. 				
Sla	ve ID				
Set and	up the corresponding slave communication port. The value is between 1 1 247.	1			
Co	ntroller	1			
ln r ● ●	naster mode, device types options are: Delta PLC: Use this option for Delta DVP / AH / AS series PLCs Other: Use this option for non-Delta PLCs. HEX means hexadecimal address; DEC means decimal address.	Delta DVP PLC			
Ad	dress Type				
In m cont	aster mode, the address type would changes with different options of roller type.:				
•	Delta PLC: address types would be $D/M/S/X/Y$, which D is a word type and $M/S/X/Y$ are of bit type.				
•	Other: Address type is 0x/1x/3x/4x/Swap				
	a) 0x: Coils(Modbus function code: 01/05), read-write.				
	b) 1x: Discrete Inputs(Modbus function code: 02), read only.				
	C) 3x: Input Registers (Modbus function code: 04), read only.				
	d) 4x: Holding Registers (Modbus function code: 03/16), read-write.				

Description	Default
 E) Swap: If using "double words" to read/write "holding registers", before reading or writing, the values in Hi Word and Low Word will be 	
Slave Starting Address (decimal)	
 Set up the slave starting address for read/write the registers in a PLC. Delta PLC: Enter the internal D register number. If you need to read / write D0, please enter 0 here. Other: Enter the Hexadecimal or Decimal actual address. For example: Holding Register: 400100, take 0100 (decimal) that is 64 (hex). 	N/A
Bit	
For the X/Y type of Delta AH/AS series, the address input format is 0.0~X.15. Enter the values before decimal point in the input field of Slave Starting Address, while values after decimal point should be entered in the input field of Bit.	
Device Starting Address (decimal)	
Set up the device starting address (decimal, input range is from \$2048 to \$4095 for word type data, input range is from M0 to M511 for bit type data). \$ or M specifies that the match must start at the beginning of a Device Starting Address.	N/A
Length (1-123)	
Set the number of the continuous address followed by the starting address which will be read or write. Input range is from 1 to 123.	N/A
Operation	
Click the +/- button to add mapping or delete mapping.	N/A
Edit	
Click an item of register mapping forms that can be edited.	N/A

3.4.6 Siemens TCP

Support Siemens TCP Client mode to perform data exchange with Siemens S7-300/S7-1200/S7-1500 through Ethernet.

🗏 Siemens TCP Client

*32 Siemens TCP servers supported at most					Add Server
Row Number	Server IP	Controller	Response Timeout(ms)	Scan Interval(ms)	Operation

Click "Add Server" to enter the setting page.

DX-2300 Series Industrial Ethernet Cloud Router

Siemens TCP Client Setting					
Controller	S7-300	\checkmark			
Server IP					
Response Timeout	300	(ms)			
Read/Write Configuration					
Scan Interval	30000	(ms)			

The acceptable address range of this device is: \$0-\$1535 or \$2048-\$4095 or M0-M511.

The length should be 1 when the data type is BIT.

Make sure that the server already exists before importing, otherwise the importing is invalid and it will return to the original state.

	Add N	Add Mappings Delete All Mappings		Export Configure List		ist Imp	Import Configure List		浏览	
Row Number		Read/Write	Data Type	Address Type	ress DB O pe Number Ac		Bit	Device Starting Address	Length (1-123)	Operation
	1	Read/Write \sim	WORD ~	DB \sim			0	\$		+ -



Description	Default
Add Server	
Choose the target Siemens TCP server for connection to the routers with 32 servers supported at most.	NA
Controller	
Set the model type of the Siemens devices for communication.	S7-300
Server IP	
Set the IP address of the Siemens devices for communication.	N/A
Local TSAP	
Set up the address of local TSAP with Siemens ISO-on-TCP only when controller's model "S7-200 ISO TCP" or "S7-1200/1500 ISO TCP" is used.	N/A
Remote TSAP	
Set up the address of remote TSAP with Siemens ISO-on-TCP only when controller's model "S7-200 ISO TCP" or "S7-1200/1500 ISO TCP" is used.	N/A
Response Timeout	
Users can change the time-out value according to the actual situation with the acceptable time range from 50ms to 10000ms. If specified but the input value is out of the range, it will be set to the value of the min or max attribute.	300
Scan Interval	
Set up the time for scan interval, ranging from 50ms to 60000ms.	30000

Description	Default
Add Mappings	
Click the button to add mappings. After creating a mapping between IP addresses of slave device and DX router under the user's configuration, the system will collect data from the slave device.	N/A
Delete All Mappings	1
Delete all the existing mappings under the server.	N/A
Export Configure List	1
Export all the mapping and save as a file in the local PC.	N/A
Import Configure List	1
This function supports communication interfaces including RS232/ RS485/ MODBUS TC/ MC/ SIEMEN TCP, which share a total of 600 mapping web addresses. Notice:	
 Each communication interface can import up to 600 mapping addresses. However, if RS232 has been mapped to 10 addresses and another 600 mapping addresses are imported, the 10 mapping address imported previously will be covered. If 10 addresses has been mapping to RS232, there would be only 590 	N/A
addresses left for other communication interfaces to import. A warning message will be displayed if exceeds the limit.	
Read/Write	
 Set up the access permissions for the mapped register address; Read-only: The device regular read data from appointed registers in the slave, but will not update the data to the slave Write-only: The device updates the data to the slave when the registers values were changed, but will not read the data from the slave Read/write: The device regular read data from appointed registers in the 	Read/Write
slave, will update the data to the slave when the registers values are changed	
Data Type	
Set the type for collected data: BIT: Bit type WORD: Word type WORD(SWAP) : Double words type. 	WORD
Address Type	1
• If controller's model type is "S7-200 ISO TCP", address type can be set as V/M/Q/I; combined with data types:	
-Bit type : VB/MB/QB/IB	
-Word type : VW/MW/QW/IW	DB
-DWord type : VD/MD/QD/ID	
type can be set as DB/M/Q/I; combined with data types:	

Description	Default
-Bit type: DBn_DBX/MB/QB/IB -Word type: DBn_DBW/MW/QW/IW -DWord type: DBn_DBD/MD/QD/ID	
DB Number	
Set the DB number for the starting address of Siemens slave's register operated in read/ write tasks. Not configurable when controller's model type is "S7-200 ISO TCP".	N/A
Slave Offset Address	
Set the starting address of Siemens slave's register operated in read/ write tasks. If the address is VD100, the input value would be 100.	N/A
Bit	
The address input format is 0.0~X.7. Enter the values before decimal point in the input field of Slave Offset Address, while values after decimal point should be entered in the input field of Bit.	NA
Device Starting Address	
Set the starting address of the corresponding register. Word-type input range is from \$2048 to \$4095. Bit type range is M0~M511. The beginning of a Device Starting Address must starts with a "\$" or "M".	N/A
Length	
Set the number of the continuous address followed by the starting address which will be read or write. Input range is from 1 to 123.	N/A
Operation	
Click the +/- button to add mapping or delete mapping.	N/A
Edit	
Click an item of register mapping forms that can be edited.	N/A

3.4.7 Log Settings

This page is used for configuring the log settings, including Log to Console, Remote Log Service, Remote Log Server Address, and Port of Remote Log Server.

☆ SYSTEM > Log Settings

Log Settings		
Log To Console	No T	
Remote Log Service	Disable •	
Remote Log Server Address]
Port Of Remote Log Server	514	(1~65534)

Save Cancel

Description	Default		
Log to Console			
Set up the log to the console port.	No		
Remote Log Service			
Enable/disable the remote log service.	Disable		
Port of Remote Log Server			
Set up the remote log server port, ranging from 1 to 65534.	514		

🔔 Notice

• Remote log service is used for qualified engineers to check the device remotely when errors occurred. With this service, there is no need to log in to the device, device logs can be exported to the remote log server. The server should support the syslog protocol. When this functionality is enabled, it will take up some resources. Do not enable this functionality disabled, unless it's necessary.

3.4.8 Firmware Upgrade

This page is used for upgrading the system.

☆ SYSTEM > Firmware Upgrade

🗏 Firmware	Upgrade
------------	---------

DO NOT turn off the power supply or reboot the device during the upgrade process. Please select the correct firmware package which is consistent with the device model, otherwise the device may be damaged !

(Before upgrade the firmware, please backup the settings and data. Please contact the local dealers or manufacturers when failed to upgrade the firmware)

Browse...

Select Firmware

Upgrade

Description	Default
Select Firmware	
Click "Browse" to select the new firmware file.	N/A
Upgrade	
Click "Upgrade" to upgrade firmware. The device will reboot after the upgrade is done.	N/A

3.4.9 **Backup & Restore**

This page is used for backing up and restoring the configurations.

☆ SYSTEM > Backup & Restore

🗏 Backup & Restore

Device configurations c	an be backed up a	and saved to local	I PC		
					Backup
Configuration restoration configurations in your .	on will remove the .cfg file	e current settings	in the device and	I restore th	ie
Select .Cfg File		Browse			
					Restore

Configurations will be reset to the factory default settings, device will be reboot after the reset

Reset To Factory Default

Description	Default
Backup	
Click "Backup" to save the device configurations on your computer.	N/A
Restore	
Click "Browse" to select the backup file and then click "Restore" to restore the configurations. The device configuration will be restored to the previous version and the device will reboot after the restoring is done.	N/A

Description	Default
Restore To Factory Default	
Click "Restore To Factory Default" to reset the configurations to the factory defaults. The device will reboot after the reset is done.	N/A

3.4.10 Scheduled Jobs

This page is used for scheduling job configurations, including ADD A New Job, Export Job List, and Import Job List.

 $\stackrel{}{ alpha}$ SYSTEM > Scheduled Jobs

	Add A New Job	Exp	ort Job List	Import Jol	b List		Browse	
ID	Job Name		Job Type			Timestamp	Enabled	

3.4.11 Add A New Job

Click "Add A New Job", and then you will see the following page. Follow the instruction to add a new scheduled job.

 $\stackrel{}{ alpha}$ SYSTEM > Scheduled Jobs

🖩 Add A New Job	
Job Name	
Enabled	Yes 🗸
Time Configurations	
Recurring Job	Once \checkmark 01 \checkmark Hour 00 \checkmark Minute
Date	2015 \checkmark Year 01 \checkmark Month 01 \checkmark Day
Job Type	Restart device V
	Save Cancel

Description	Default
Job Name	
Set up a name for your scheduled job. The name shall be composed of letters, numbers and underline, starting with a letter or number. The maximum string length is 32 bytes.	N/A
Enable	
Select "Enable" to activate this functionality.	Enable
Recurring Job	

3

Description	Default
The scheduled job can be done Once, Every day, Every week, or Every month.	Once
And the specific time can be further defined.	01:00
Date	
Select a specific date to perform the scheduled job.	2015.01.01
Јор Туре	
Select one of the job type for the scheduled job.	
Restart device	Postart davias
Enable DIACloud Service	Restart device
Disable DIACloud Service	

3.4.12 Export Job List

Click "Export Job List" to export the scheduled jobs for future usage.

```
\stackrel{}{	alpha} SYSTEM > Scheduled Jobs
```

	Add A New Job	Exp	oort Job List	Import Jo	b List		Browse	
ID	Job Name		Job T	ype		Timestamp	Enabled	1

3.4.13 Import Job List

Click "Chose file" to select the scheduled jobs file you have saved and then click "Import Job List" to import the scheduled jobs you have set before.

```
☆ SYSTEM > Scheduled Jobs
```

	Add A New Job	Exp	oort Job List	Import Jol	b List		Browse	
ID	Job Name		Job T	ype		Timestamp	Enabled	

3.4.14 Network Diagnosis

This page is used for diagnosing the network status; methods are Ping Test and Route Trace.

SYSTEM > Network Diagnosis

讍	Netw	ork	Diagn	osis
---	------	-----	-------	------

Diagnosing Method	Ping Test 🔹			
Host Name/IP Address	www.google.com	•	Start	
				0
				÷.

Description	Default
Diagnosing Method	
Selections are "Ping Test", "Route Trace" and "Cloud Service Diagnose".	Ping Test
Host Name/IP Address	
Setup the target domain or the IP Address. Options are www.google.com, www.yahoo.com, www.MSN.com, www.amazon.com, www.wikipedia.org, www.facebook.com, www.diacloudsolutions.com and others. When you choose others, you can input the domain/IP manually. Notice This function would be disabled when the setting of diagnosing method is "Cloud Service Diagnose".	www.diacloudsolutions.com
Start	
Click "Start" to start the network diagnosing. While running the network diagnosing, the settings cannot be changed.	N/A

3.4.15 Trouble shooting

Under normal conditions of network, if the connection with DIACloud has been failing over 30 mins after enabling the Trouble Shooting function, the device will begin to upload all device logs to the specific server directly for engineers to

troubleshoot remotely. If the problem persists, the time interval for the device to upload the logs is 1, 2, 4, 5, 16, and 24 and then the time interval is fixed to every 24 hours.



Trouble Shooting Setting						
Trouble Shooting	Enable 🗸					
	Save					
🔔 Notice						
• It is suggested to di the engineer analyz	ble this function. However you should enable this function, if and advised you to, when some issues occur.					

3.4.16 System Reboot

This page is used for manually rebooting the system. Click "Restart Device" and the system will reboot.

☆ SYSTEM > System Reboot

🗏 System Reboot

The network will be temporarily shut down during system reboot, please wait! Restart Device

3.4.17 Event Management

This page is used for setting up 2 types of events, Communication Verification and Alarm Event.

• Communication Verification: when the slave (such as PLC) is connected with a router via MODBUS TCP or MODBUS RTU, the router checks whether the tunnel is a reliable connection-critical lock or not.

Communication verification expression between PLC and the router can be set here. The expression is the numeric expression in C, complying with the standard C programming syntax. The expression can be a single variable, a constant, or a single variable equation. The name of the variable is limited to "A", and the expression should be something like this $(A+100)^{*}45$.

SYSTEM > Event Management

🗏 Event Management			
Event Type	Communication verification •		
Input Expression		Save	

The expression is the numeric expression in C, the syntax complies with standard C programming syntax. The expression can be a single variable itself, or a constant, or a single variable equation. The name of the variable is limited to be "A", the expression can be:(A+100)*45

The operators that the expression supports are as below:

Operators	Types	Examples	Description
+	Arithmetic operator	A+100	Addition
-	Arithmetic operator	A-100	Subtraction
*	Arithmetic operator	A*100	Multiplication
/	Arithmetic operator	A/100	Division
&	Logic operator	A&A+100	Logic AND
l	Logic operator	A A+100	Logic OR
0	Bracket operator	(A+100)*45	Change operation order
^	XOR operation	A^100	XOR operation

• Alarm Event: Click "Add" to set a new alarm event, input the Alarm Name, Description, Alarm Criteria, Event Interval, Repeat Times, Alarm Content and Target Receiver. Click "Details" to modify the existing alarm. Click "Delete" to delete the existing alarm. Click "Copy" to duplicate the alarm.

SYSTEM > Event Management

🗮 Event Management								
Event Type	Alarm event	T						
				Add				
Alarm Name	Alarm Description	Alarm Criteria	Target Receiver	Operation				

After clicking "Add", the following page will show up.

SYSTEM > Event Management

🗏 Alarm Event	
Alarm Name	
Alarm Description	
Alarm Criteria	
Event Interval	0 (0~6000)minute
Repeat Times	0 (0~999)times
Alarm Content	Time Date Name Description Clear
Target Receiver	Max support 5 reciever,use ';' to seperate the different email address
	Save Back

Description	Default
Alarm Name	
Input an alarm name. The name shall be composed of numbers, English letters, uppercase and lowercase. The maximum string length is 32 bytes.	N/A
Alarm Description	
The alarm description shall be composed of numbers, English letters, uppercase and lowercase. The maximum string length is 50 bytes.	N/A
Alarm Criteria	
The format of alarm variable is {\$number 0-4095}, the alarm criteria can be a single alarm variable, or a formula of one or several alarm criteria. For example, the formula can be: {\$2003}+{\$2004}*100/2-1.	N/A
Event Interval	
The time interval of alarm sending	0
Repeat Times	
The repeated times of alarm sending	0
Alarm Content	
Set up the information shown on the alarm contents. The content of the alarm will be sent to the target when alarm criteria are met. The information order can be self-defined.	N/A

Description	Default
• Time: the time when the alarm occurred	
• Date: the date when the alarm occurred	
• Name: the name of the occurred alarm	
• Description: the description of the occurred alarm	
For example: Register \$2048 represents electrical voltage, the value of register \$2048 is 10, and the alarm content is set as: {Date} {Time} Voltage = {\$2048}, then the query content received by users will be: 2016/06/01 10:00:00(currently time) Voltage = 10. The maximum content length is 95 characters.	
Target Receiver	
Set up the recipient. User can maintain the list by 【Control List Of Event Management】 in Privilege Management function. System only response the query from receiver list.	N/A

🚺 Notice

• {} is a special system symbol, which is used to reference system variables or system registers, like \${Time}, \${Date} or \${Number 0 - 4095}. Please use it with caution.

3.4.18 Register Management

This page is used for setting up the rules of register data upload to Cloud. Click "Add" to set a new rule. Click "Edit" to modify the existing rule. Click "Delete" to delete the existing rule.

		Add	Export Conf	figure List	Import Configure List	浏览	
ID	Register	r Start A	ddress	Length	Upload To Cloud	History Data	
1		\$2048		10	Yes	No	Edit Delete

The address segment 2048~4095 can be self-defined. The Start address, Length, Uploaded to Cloud or not and keep history or not can be set up.

After clicking "Add", the following page will show up.

SYSTEM > Register Management

i≣ Add			
Register Type	Word \checkmark		
Register Address	\$	(\$2048-4095, M0-5	11)
Length			
Uploaded To Cloud	Yes ∨		
Keep History	No 🗸		
	Save	e Back	

Description	Default
Export Configure List	
Export the configure list to the file and save to local PC	N/A
Import Configure List	
Import configure list from the local PC.	
A Notice: Up to 20 mappings can be imported. If a total of 10 addresses	N/A
have been mapped and another 20 mapping addresses are imported, the 10 mapping address imported previously will be covered.	
Register Type	
Set up the register data type, options are "Word" and "Bit".	Word
Register Start Address	
Set Register Start Address applicable for rules. Word-type addresses start with "\$", configurable from \$2048~\$4095. Bit-type addresses start with "M", configurable from M0~M511.	N/A
Length	
Set the number of the effective register address followed by the start address. Input value as 1 indicates one register. Word-type effective range:1-2048. Bit-type effective range: 1-512.	N/A
Uploaded To Cloud	
是否将这些寄存器的值上传到云端,可选项:"是"和"否",默认选项"是"。	Yes
Keep History Data	
 This function will keep or overwrite the history data when the register values are uploaded to Cloud. Yes: The existed register values in the cloud WON'T be overwritten by the new uploaded register values. 	No
 No: The existed register values in the cloud CAN be overwritten by the new uploaded register values. 	

🚺 Notice

• When the values in the register changes, the results will be uploaded to cloud.

3.5 Cloud Service

3.5.1 Cloud Configurations

In this page, user can assign the cloud account which will be used to connect to DIACloud by device. Input the user name, the password and click "Verify". Refer to Chapter 4 for DIACloud account registration.

1. Login with your DIACloud account then click the "Verify" button to authenticate with DIACloud server.

$\widehat{\mathbf{m}}$ CLOUD SERVICE > Cloud Configurations

Eloud Configurations

User Name:	
Password:	Verify
2. After authentication such and device name.	cessfully, the cloud configurations will show up then the user can modify the secure tunnel
$\hat{\mathbf{m}}$ CLOUD SERVICE > Cloud (Configurations
🗏 Cloud Configurations	
User Name:	@163.com
Password:	Verify
Secure Tunnel:	default 🗸
Device Name:	DX2300_EA98
Secure Tunnel DHCP:	Available
When secure tunneling DHCP	server is available, and the IP address is allocated by the DHCP server in secure tunnel

network, the IP address of this device can be found in the cloud portal

Get IP From Cloud:	Yes 🗸
Network Protocol:	UDP 🗸
	Bind Cancel
3. The user also can set IP	address manually.
Get IP From Cloud	No 🔻
Cloud IP Range:	192.168.200.100 - 192.168.200.200
Cloud Netmask:	255.255.255.0
Device IP:	
	(Device IP should be in the same subnet with cloud IP)

4. Click the "Bind" button, the DX router will bind with DIACloud server and establishe a secure tunnel between the DIACloud server and the DX router. Meanwhile a new IP will assign to DX router from DIACloud server (assign from the cloud DHCP server or a user specified).

Cloud account register success, starting secure tunnel, please wait.....

 Your browser will access to the DX router with new IP address automatically if DIACloud account binds with DIACloud server successfully. Please make sure a PC and DX router are in the same subnet; otherwise PC will not be able to access to the DX router.

	192.168.1.1 上的网页显示:	×	
Cloud Configurations configu	Cloud account binding success! Will use the new IP to relogin device. If the web page can not		
$\widehat{\mathbf{m}}$ CLOUD SERVICE > Cloud Co	computer. Device new IP is 192.168.200.100		
	确定]	
	Starting secure tunnel, the device IP address is: 192.168.200.100,plese login the web page using this IP address or www.diadevice.com after secure tunnel start success I		

6. If the network is in the poor condition, The binding proccess could be successfully but the Service Status is shown "Disable".

金 CI	LOUD	SERVICE	>	Cloud	Configurations
------	------	---------	---	-------	----------------

User Name:	6@163.com		
Registration Status:	Registered	Unbind	
Service Status:	Disabled	Enable	
Secure Tunnel:	default		
Device Name:	DX2300_B324		
Secure Tunnel DHCP:	Not available		
Device IP:	192.168.5.5		
Network Protocol:	UDP 🗸		

7. In this situation, the browser will access to 192.168.1.1 and the service status will be "Disable". You can re-enable the service status to rebuild the secure tunnel again in cloud configurations.

When the service status is shown "Enable", that means the DIACloud service is actived on DX-2300LN-WW. The user also can get the related information in cloud platform.
 CLOUD SERVICE > Cloud Configurations

User Name:	@163.com	١
Registration Status:	Registered	Unbind
Service Status:	Enabled	Disable
Secure Tunnel:	default	
Device Name:	DX2300_B324	
Secure Tunnel DHCP:	Not available	
Device IP:	192.168.5.5	
Network Protocol:	UDP	

9. Click the "Unbind" button, DX-2300LN-WW will remove the registered account in DIACloud.

Description	Default
User Name	
Set up the name for the DIACloud account.	N/A
Password	
Set up the password for the account.	N/A
Verify	
Check if the username and the password are matched.	N/A
Secure Tunnel	
Select the device under the account to join in a certain secure tunnel network group. For secure tunnel related settings, go to http://www.DIACloudSolutions.com/	Default
Device Name	
Set up the name for the device	N/A
Secure Tunnel DHCP	
When secure tunneling DHCP server is available, and the IP address is allocated by the DHCP server in secure tunnel network, the IP address of this de vice can be found in the cloud portal.	N/A
Get IP From Cloud	
When selecting "Yes", IP address can be obtained by the cloud. When selecting "No", the IP address can be manually set. Page will display IP range for user reference.	Yes

Description	Default
Network protocol	
 Set the network protocol of the security tunnel.Options are TCP and UDP. UDP: UDP has a faster data transfer speed. If the network is not lost packet, please use this option TCP: When the network packet loss is serious, it is recommended to select TCP. After binding the cloud account, you can still change this option, but you must disable the cloud service before changing. When the agent is turned on, the user can only select TCP. 	UDP
Cloud IP Rang	
Display the Cloud IP Range. The Cloud IP Range is depended on the secure tunnel setting. For the secure tunnel setting, please refer to 5.2.5 Tunnel Network.	N/A
Cloud Netmask	
Display the Cloud Netmask. The Cloud Netmask is depended on the secure tunnel setting. For the secure tunnel setting, please refer to 5.2.5 Tunnel Network.	N/A
Device IP	
User can assign a IP address for this device, the IP should be in the same subnet with Cloud IP.	N/A

🛝 Notice

• Users can log-in to http://www.DIACloudSolutions.com/ and register for a DIACloud account.

• In rare case, you can't access the web because the computer did not refresh the IP and DNS after the activation, please re-plug the cable to resolve the issue.

3.5.2 Proxy Setting

If the user's networking environment requires outbound network connections to go through a HTTP or HTTPS proxy.

💼 CLOUD SERVICE > Proxy Setting

HTTP Proxy	Enable 🔻
Proxy Addr	
Proxy Port	
Proxy Username	
Proxy Password	



Description	Default
HTTP Proxy	·
Enable or disable the http proxy	Disable
Proxy Addr	
Set up the domain/IP of the proxy server	N/A
Proxy Port	
Set up the port of the proxy server	N/A
Proxy Username	
Set up the user name to login the proxy server	N/A
Proxy Password	
Set up the password to login the proxy server.	N/A
Save and Test	
Save the configuration and test to connect to the DIACloud.	N/A

3.5.3 Secure Tunnel Firewall

In this page, user can set up the firewall for the secure tunnel.

✿ CLOUD SERVICE > Secure Tunnel Firewall			
🗏 Multicast	Setting		
Allow Multicast	in Secure Tunnel Yes V Save		
I Firewall	Gettings		
Firewall Of Sec	re Tunnel Disable V Save	Add	
ID	MAC Address	Operation	

🗏 Add A MAC Address

MAC Address

Save	Back

Description	Default
Allow multicast in secure tunnel	
Set the security tunnel, whether to allow multicast transmission of the nature of the packet. Options: Allowed, not allowed	Yes
Firewall of secure tunnel	
 Set up the specified MAC device will be allow or forbid to transmit the data in the secure tunnel. Options as below: Disable: Disable this function. Black List: If the network device's MAC address is blacklisted, these devices will NOT be able to transmit packets to the secure tunnel White List: If the network device's MAC address is blacklisted, these devices will be able to transmit packets to the secure tunnel. 	Disable
Add	
Add a new MAC into the list.	N/A

3.5.4 Cloud Log

Any information about cloud event can be exported from this function

T CLOUD SERVICE > CIUUU LU	â	CLOUD	SERVICE	>	Cloud	Log
----------------------------	---	-------	---------	---	-------	-----

Cloud Log Level				
Cloud Log Level	Error V		Save	
	Cloud log level wil	take effect whe	n you restart (the relative module.
🗏 Download Cloud Log				
Select The Module:	Uploader 🗸	1	Download	

Description	Default
Cloud Log Level	
You can set different levels of log messages and saved to export to the	
engineering staff to view. Options as below (Level from low to high):	
Trace: The TRACE Level designates finer-grained informational events	
than the DEBUG	
Debug: Fine-grained informational events that are most useful to	
debug an application	
Info: The INFO level designates informational messages that highlight	Error
the progress of the application at coarse-grained level.	
Warm: The WARN level designates potentially harmful situations.	
• Error: The ERROR level designates error events that might still allow	
the application to continue running.	
Fatal: The FATAL level designates very severe error events that will	
presumably lead the application to abort.	
Select Log Level	
Specify to download the cloud service module log. Options as below:	
Uploader: Data upload module	Uploader
Secure Tunnel: Secure Tunnel module	
Binding: Account binding module	

3.6 SD Card Quick Configuration

DX-2300LN provides the multiple configurations via SD Card quickly.

- Upgrade the device firmware
- Import the device configuration
- Active the device with the DIACloud account.

The SD Card quick configurations will triggers by the following file is created in the SD card after the DX-2300LN reboots:

- The upgrade-package file 'DX2300_UpgradeImage_NorFlash_xxxx_xxx.bin'
- The device configuration files 'backup.cfg'. (Please refer 3.4.8 Backup & Restore)
- The cloud configuration file 'Provision.bin' (Please refer to the following steps).
 - 1. Go to the DIACloud platform (DIACloudSolutions.com).
 - 2. Log in the DIACloud webpage and click "SECURE TUNNELS"
 - 3. Click to select the Network which you'd like to use and then click the **even** to see and check the details.
 - Click the _____ to download the generated Provision.bin to the local computer.

Q Search					+ C
# Network Name 个	DHCP	DHCP IP Range	Data	Status	Operation
1 test	Disable	192.168.200.100 192.168.200.200	1.90 GB	Normal	****
Total 1 virtual network(s)					
		×			
Network Name					
default					
(inter-					
DHCP					

5. Copy Provision.bin file to SD card.

Power off the device and then insert the SD card into the device (SD card slot below the SIM card slot, on the right side of the device). Turn on the device and it will automatically bind. Check the SD card status indicator to see if the binding is successful.

The following beep codes are for SD Card Quick Configurations, its definition that the various combinations of the configuration file exist on SD card. ($\mathbf{x} - fail$, $\sqrt{-}$ success or not this operation)

Beep Code	Upgrade.bin	backup.cfg	Provision.bin	
1 long	×	\checkmark	\checkmark	
1 long, 1 short	\checkmark	×	\checkmark	

4.

Beep Code	Upgrade.bin	backup.cfg	Provision.bin
1 long, 2 short	×	×	\checkmark
1 long, 3 short	\checkmark	\checkmark	×
1 long, 4 short	×	\checkmark	×
1 long, 5 short	\checkmark	×	×
1 long, 6 short	×	×	×
None	\checkmark	\checkmark	\checkmark

\rm Notice

- Name rule for BIN file: Provision.bin
- Please do not change the file name of firmware upgrade-package.
- Please do not create the two different upgrade-package file in SD Card. In order to avoid the upgrading process fails.
- At least a 10-minute interval of separation between the two SD Card Quick Configuration

МЕМО

4

Chapter 4 DIACom

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4.1 Introduction to DIACom

DIACom allows you to create a secure tunnel between your PC and router, making it possible for your PC to communicate remotely with the devices connected to the router. Thus engineers can control, monitor, operate, program and diagnose the device remotely whenever there is internet connectivity.



\rm Notice

- DIACloud provides you with cloud services, including the connected device management, secure tunnel network creation, data upload/download, and directional transmission.
- If you need to configure or monitor your controller, you will need to install programmable logic controller software, for example WPLSoft/ISPSoft for Delta PLC.

4.1.1 Select a Suitable Firmware Version

Find a suitable DIACom firmware version according to the following table below for your router.

Corresponding Table:

Device Model	Firmware Version
DX-2100	V1.3.3.0 or above
DX-2300	V1.3.3.0 or above

\rm Notice

If the device firmware is lower than 1.3.3.0, please use DIACom 1.2.8.0 or lower.

4.1.2 DIACom Installation

Obtain the DIACom firmware package from the official website or from our sales representative. Administrator privileges are required to run and install the package. Uninstall older versions of DIACom before downloading new DIACom firmware package.

ž

DIACom supports Windows XP, Windows 7 (32-bit and 64-bit) and Windows 8 (32-bit and 64-bit).

4.1.3 DIACloud Account Registration

- 1. Before registration, you should have a valid email account. (DIACloud uses your email address as your account.)
- 2. Open the DIACloud web page (http://www.DIACloudSolutions.com). The system will redirect you to the registration page:

DIACloud	•
🔛 Email*	
Password*	
Remember Me	
LOGIN	
CREATE AN ACCOUNT FORGOT PASSWORD?	
A Notice	
Click 🜐 at the upper right corner to change the interface langua	ge to English.

3. Input your email address, password and other relevant information on the registration page. Select "I Agree" and click "CREATE AN ACCOUNT".



4. After clicking "CREATE AN ACCOUNT", a congratulation page will be prompted and an activation email will be sent to the email address you have used as your DIACloud account.



5. You will find an activation email sent from <u>no-reply@diacloudsolutions.com</u> in your email box. Open the email, click "here" link in the email and complete DIACloud account activation operation. And you will be redirected to the DIACloud login page. Input your account and password to log in to the DIACloud.

```
      Activate your account on DIACloud 『 P O B

      发件人:
      DIACloud = no-reply@diacloudsolutions.com> +

      收件人:
      我 = steven8160@163.com> +

      时 间:
      2016年05月11日 11.07 (運調三)

      Dear User,

      Please complete your registration by following the link below:

      http://www.diacloudsolutions.com/#/activate?n=steven8160%40163.com&t=fM1xduuNyNZSo4NNyVQcUx5ACGrO5H

      Please activate your account within 48 hours, otherwise you need to re-create your account.

      If you did not register recently, or believe you have received this email in error. Please disregard this message.

      请点击下面的链接完成注册:

      http://www.diacloudsolutions.com/#/activate?n=steven8160%40163.com&t=fM1xduuNyNZSo4NNyVQcUx5ACGrO5H

      请在48小时内邀话您的账号, 否则您需要重新注册.
```

如果该账号不是您本人注册的,请忽略本邮件。

Thanks!

The DIACloud Team

4.1.4 Bind DI ACloud Account

Follow the steps blow to bind your DIACloud Account.

- 1. Local Network Setups: Please refer to Chapter 2.1 to 2.1.3 Web-based GUI Configuration for more information.
- 2. Bind DIACloud Account: Please refer to Chapter 3.5 Cloud Service for more information.

🔔 No	otice	
• Se	cure Tunnel: Secure tunn oups of secure tunnel for e	nel is a virtual network. Users can set up several asier device management.
• De na	vice Name: the serial num me by default.	nber + "_" + "Mac address" of the device is the device
• Ge	t IP From Cloud:	
-	When selecting "Yes": according to the Secur addresses. Take note of logging to the DIAClou When selecting "No": T	The system will assign an IP address for the device e Tunnel settings and the availability of the IP of the assigned IP address, it will be used when d. The IP address can be manually set.
	Secure Tunnel DHCP: Get IP From Cloud Cloud IP Range: Cloud Netmask: Device IP:	Available No 192.168.200.100 - 192.168.200.200 255.255.255.0 (Device IP should be in the same subnet with cloud IP)
	The IP address of the I should be in different n	DX-2300 Series and the WAN of your connected PC network segments.

4.2 DIACom Operation

4.2.1 Setup a Secure Tunnel

Make sure there is internet connectivity, before creating a secure tunnel between your local PC and router via the DIACom. Http Proxy and Port Agent are configurable in DIACom network setting function, you can set it to avoid the possible limitation.

1. Run DIACom and log in with your router's cloud account.

DIACom			×
▲ 1097780724@qq.com			
Remember me Log In Sign up for DIACloud	Forgot?	1.4.0.	0

2. Click 🔯 to go into network setting page if need be.

	- × DIACom
HTTP Proxy	
IP Address	Port
User name	Password
Diagnose	Save Back

- **Http proxy:** Please fill in the proxy server address, port, username and password if the LAN needs to set the proxy to access the Internet. Click "Save" button to enable the config.
- **Diagnose:** The user can click the Diagnostic button to test the current internet settings, whether to connect to the DIACloud server

Check proxy mode none Connect to load balancer Success - 119.29.52.141:22000 119 ms - 117.28.254.133:22000 329 ms Connect to web server Success
Connect to load balancer Success - 119.29.52.141:22000 119 ms - 117.28.254.133:22000 329 ms Connect to web server Success
- 119.29.52.141:22000 119 ms - 117.28.254.133:22000 329 ms Connect to web server Success
- 117.28.254.133:22000 329 ms Connect to web server Success
Connect to web server Success
- api.diacloudsolutions.com:443 1229 ms
Connect to security server Success
Save Log Clo

3. After the login is successful, the software displays the security tunnel page. The security tunnel list is displayed on the left side of the page, and the network information of the security tunnel and the device list are displayed on the right. Users can choose to use DHCP or manually set the cloud IP address

access any network domains and IP addresses

- **DHCP:** Obtain an IP address from Cloud automatically when Cloud DHCP function is available.
- Static: Manually set the IP address, the IP should be in the same subnet with DX device

DIACom	Secure	Tunnel		ł)@163.con	a
Q					_	
default	Local IP	address 💿 DHCP	192.168.10.100 - 1	92.168.10.200) Crea	ate Tunnel
Test_CN		Static	192 - 168 - 10 -	2 / 255 - 2	55 - 255 - 0	
Project_1	Status	Name	SN	Latency	IP Address	Operation
Project_2	Online	DX2100_958B	DX21000518050274	75 ms	192.168.10.10	
Project_3	Online	DX2300_358B	DX23000316180001	19 ms	192.168.10.20	
Project_4	Online	DX2100_E988	DX21000216140003	90 ms	192.168.10.30	
Project_5						
Demo_1						
Customer_A						
Customer_B						
Customer_C						
Customer_D						
1 / 2 < < > >						
				Loc	cal IP Address	N/A



5. Right-click, then click Properties.

Δ

6. Click the Networking tab. Under This connection uses the following items, click either Internet Protocol Version 4 (TCP/IPv4)

Connect using.		
Network Co	onnection	
		Cuto
This connection u	uses the following items:	Contigure
Client for	Microsoft Networks	
QoS Pac	sket Scheduler	
File and I	Printer Sharing for Microsoft	Networks
Internet F	Protocol Version 6 (TCP/IPv	6)
M - Internet i	Protocol Version 4 (TCP/IPv	(4)
🗹 🛶 Link-Laye	er Topology Discovery Map	der I/O Driver
177	er Topology Discovery Resp	oonder
🗹 📫 Link-Laye	A CARACTER CONTRACTORY CONTRACTORY	
Link-Laye	5	
Install	Uninstall	Properties
Install	Uninstall	Properties
Install Description Transmission C	Uninstall	Properties
Install Description Transmission C wide area network	Uninstall	Properties ocol. The default ommunication

- 7. Set the IP address of the local computer manually. However, you'll need to make sure there are no IP conflicts.
 - 4. After the configuration is complete, click the Create Tunnel button to establish a connection with the specified tunnel.
 - 5. The following information is displayed: tunnel connection status, local delay to the DIACloud cloud server, and the IP address used by the local virtual network adapter.

DIACom	Secure	Funnel		4)@163.con	ⁿ ⊽ − ×
Q	Secure					
default	Local IP	address 🔘 DHCP	192.168.10.100 - 1	92.168.10.200) Dis	sconnect
Test_CN		 Static 	192 - 168 - 10 -	2 / 255 - 2	55 - 255 - 0	
Project_1	Status	Name	SN	Latency	IP Address	Operation
Project_2	Online	DX2100_958B	DX21000518050274	157 ms	192.168.10.10	
Project_3	Online	DX2300_358B	DX23000316180001	20 ms	192.168.10.20	
Project_4	Online	DX2100_E988	DX21000216140003	90 ms	192.168.10.30	
Project_5						
Demo_1						
Customer_A						
Customer_B						
Customer_C						
Customer_D						
1 / 2 << > >						
Secure tunnel is set up.	153 ms			Loc	al IP Address 19	92.168.10.2

6. After successful connection with the cloud, the local computer will be able to use debugging tools or monitoring software to debug, monitor, and program the remote network interface devices. In addition, you can remotely configure the router's router page (click the device in the device list Of the IP address) of the router for remote configuration.

🔑 Notice

- You can create different groups of secure tunnels, divide different devices into groups according to their needs, and implement group management devices
- To avoid the virtual network card IP network segment and the local computer network card of the actual network to avoid the same network conflict
- After the secure tunnel is successfully connected, you must first disconnect the current connection to select another security tunnel,

4.2.2 Create a Virtual Serial-Port

To debug a remote serial device,

 Click the icon will at the back of the corresponding remote device to enter the Create Virtual Serial Interface

DIAcom				4)@163.com	n ⊽ – ×
	Secure	Tunnel				
Q					_	
default	Local IP	address 🔘 DHCP	192.168.10.100 - 19	92.168.10.200) Dis	sconnect
Test_CN		 Static 	192 - 168 - 10 -	2 / 255 - 2	55 - 255 - 0	
Project_1	Status	Name	SN	Latency	IP Address	Operation
Project_2	Online	DX2100_958B	DX21000518050274	157 ms	192.168.10.10	
Project_3	Online	DX2300_358B	DX23000316180001	20 ms	192.168.10.20	
Project_4	Online	DX2100_E988	DX21000216140003	90 ms	192.168.10.30	
Project_5						
Demo_1						
Customer_A						
Customer_B						
Customer_C						
Customer_D						
1 / 2 < > >						
Secure tunnel is set up.	153 ms			Loc	cal IP Address 19	92.168.10.2

2 Click on the "Create" button to create a virtual COM port on the local PC, related to the RS-232 or RS-485 port on the remote devices. If the RS-232 or RS-485 port is not working with transparent mode, the corresponding "Create" button would be unavailable.

A Notice
Support RS-232 and RS-485 working with transparent mode at the same time.

DIACom	Virtual COM Port		@163	.com
Q				
default	Device Name DX2100_E98	8 - Online		Back
Test_CN	IP Address 192.168.10.3	30 330 ms		
Project_1	RS-485			
Project_2	COM Port Auto	👻 🗌 PPI 🗹 Auto Baudrate		Create
Project_3	COM Port	Baudrate	Stop Bits	
Project_4	Data Bits	Parity Bits	Status	
Project_5				
Demo_1	RS-232			
Customer_A	COM Port Auto	V Auto Baudrate		Create
Customer_B	COM Port Data Bits	Baudrate Parity Bits	Stop Bits Status	
Customer_C				
Customer_D				
1 / 2 << > >				
Secure tunnel is set up.	81 ms		Local IP Address	192.168.10.2

3 After create successfully, the local PC can perform commissioning, programming and monitoring to the remote devices with debugging tools or monitoring software.

Description	Default
PPI	
Specially optimize uploading and downloading action PPI for Siemens S7-200 series.	
Notice	Unchecked
Please leave unchecked for devices not included in Siemens S7-200 series to	
avoid failed upload/ download error.	
Auto Baudrate	
Enable or disable Auto Baudrate function.	
Checked: Perform Auto Baudrate detection.	
Unchecked: Close Auto Baudrate detection.	Unchecked
Notice	
We suggest to turn off this function if you're using Gitzo's or Mitsubishi's PLC devices.	



4.2.3 Remote Control and Monitoring via DIACom

4.2.3.1 Via a LAN Port

If your router is connected to remote devices via a LAN port, you can use the configuring/monitoring software on your local computer to configure and monitor after opening a virtual tunnel. Some program would require the IP addresses of your remote device. Simply input the required information in the configuring/monitoring software and then you can configure and monitor the connected device remotely.

4.2.3.2 Via a RS232/RS485 Port

After opening a virtual tunnel, you will need to follow the setups below before using WPLSoft or other configuring/monitoring software on your local computer to configure and monitor the connected device remotely.

- 1. Click IP address in the DIACom device list or open a browser and input the IP address of the router which is connected to your remote device on the search bar and then log in.
- 2. Go to the System setup page, select the setup option RS232 or RS485 and input the required information to set up. Make sure the parameters are consistent with your remote device.
 - Working Mode : Transparent mode
 - Parameters of COM (Baud Rate, Data Bits, Stop Bits, Parity Bits, Flow Control)

Working Mode	Transparent mode V
Baud Rate	9600 ~
Data Bits	8 ~
Stop Bits	1 ~
Parity Bits	None \checkmark

3. Go back to the DIACom and click is to create a virtual tunnel. Once the creation is done, the virtual serial-port number will show up on the same page. Users can use it to configure and monitor the connected device remotely. Click "Delete" to delete the virtual serial-port.

DIACom	Virtual COM Port)@163	.com
Q			
default	Device Name DX2100_E988 - Online		Back
Test_CN	IP Address 192.168.10.30 330 ms		
Project_1	RS-485		
Project_2	COM Port Auto V DPI V Auto Baudrate		Delete
Project_3	COM Port COM5 (Connected) Baudrate -	Stop Bits -	
Project_4	Data Bits - Parity Bits -	Status Idle	
Project_5			
Demo_1	K5-232		
Customer_A	COM Port Auto V Auto Baudrate	Chan Bita	Create
Customer_B	COM Port Baudrate	Stop Bits	
Customer_C		Status	
Customer_D			
1 / 2 (< < > >)			
Secure tunnel is set up.	51 ms	Local IP Address	192.168.10.2

\rm Notice

If the PLC is Siemens S7-200, you can select the "PPI" in the DIACom to support PPI protocol.

4. Open the WPLSoft to check if the COM parameters are consistent with the settings on your router. When these parameters are consistent, you can use the WPLSoft to configure/monitor your device remotely.

onnection Setup	1000	
Туре	RS232	·
ommunication Sett	ing	
COM Port	COM5	ASCII
Data Length	8 🗸	RTU (8 bits
Parity	Even •]
Stop Bits	1 -	Auto-detect
Baud Rate	9600 💌]
Station Address	1 :	Default
Ethernet Setting		
F Assign IP	192.168. 1. 5	5
Port	502	-
Baud Rate Decide	d by	
PLC Setting		
○ WPL Setting		
Setup Responding	g Time	-
Times of Auto-ret	ry	3 +
Time Interval of A	uto-retry (sec.)	3 +

4.2.4 Automation Startup

Users can set Automation Startup for DIACOM, The setting steps see blow.

- 1. Login to DIACom.
- 2. Click on the icon button ∇ in the upper right corner of the windows, and select "Settings".
- 3. Boot automatically log in the required configuration is as follows. Users can set according to your needs. If you only need DIACom to connect the security tunnel automatically, the device list, RS-485 and RS-232 do not need to be set.

default 👻		
192.168.200.100 - 192.168.200.200		
ss 💿 DHCP 🖲 Static		
IP Address 192-168-5-10 / 255-255-255-0		
None		
COM6 💌 🗆 PPI		
COM5		
	default * 192.168.200.100 - 192.168.200.200 is DHCP • Static 92 - 168 - 5 - 10 / 255 - 255 - 255 - 0 None * COM6 * PPI COM5	

4. Check " Start DIACom on windows logon ", and click "OK" button to save the settings.

Notice Login must be checked "remember password", otherwise DIACom can not be activated automatically Confirm that the IP / Serial Port settings do not cause conflicts



Chapter 5 DIACloud

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	roduction to DIACloud

5.1 Introduction to DIACloud

DIACloud Web is a web portal of DIACloud cloud platform. Users can check the status of connected industrial device through DIACloud Web, browse data that has been collected, receive warnings, notices and other messages that are sent by cloud platform, create and manage sub-account and virtual safety network and check login and interface logging, to improve the manageability of devices, optimize the device performance and efficiency, save the operation cost and enhance the service quality.

5.1.1 Select a Suitable Firmware Version

Please confirm that your Firmware version of router meets the requirements in the following table before use:

Device Model	Firmware Version
DX-2100	V1.3.0.1 or above
DX-2300	V1.0.0.1 or above

5.2 Instructions for DIACloud

5.2.1 Register and Login

 Open the DIACloud web page (http://www.DIACloudSolutions.com). If you have got an account, input your account and password in the following page to log in; if you have not got an account, click "CREAT AN COUNT" to register. Then the system will redirect you to the registration page:

DIACloud	•
Email*	
Password*	
Remember Me	
LDERN	

2. Input your email address, password and other relevant information on the registration page. Select "I Agree" and click "CREATE AN ACCOUNT". Please insure your region information is correct, otherwise it may cause problems in payment when you extend your service.



	DIACIo	ud
M	Emal	
â	Pass with*	
â	Confirm Password*	
	🔿 Person 🧿 Ent	terprise
*	Name*	
0	Ovening	+
0	Verification Gode*	ĠĬMĬŲ
	l Agree	AGREEMENT
	GREATE AN AGGO	UNT

3. After clicking "CREATE AN ACCOUNT", a congratulation page will be prompted and an activation email will be sent to the email address you have used as your DIACloud account.



4. You will find an activation email sent from <u>no-reply@DIACloudSolutions.com</u> in your email box. Open the email, click the link in the email and complete DIACloud account activation operation. And you will be redirected to the DIACloud login page. Input your account and password to log in to the DIACloud.

```
      Activate your account on DIACloud 東 P ② ③

        按共: ①DIACloud-no-reply@diacloudsolutions.com > (*)
        @diacloudsolutions.com > (*)
        @diacloudsolutions.c
```

5. Open the DIACloud web page (<u>http://www.DIACloudSolutions.com</u>). Log in using your account that you have registered.

5.2.2 Home

The Home Page will show up after login.

DIACloud				⊕ ¥ ≜ ±
🔒 НОМЕ		1.1		1000
ED DEVICES	6	1	0	8
ALARMS	Devices in Tatal	Drymour, in Onlaws	Aboms in 24 Hours	Secure Turnels in United
G SECURE TUNNELS				
🚉 SUB USERS				
E LOGS				
02016 Della Electronics, Inc. All Rights Reserved,				

Item	Description
Menu	User can switch to corresponding function through menu on the left.
Devices Total	The number of total devices.
Devices is Online	The number of total online devices.
Alarms in 24 Hours	The number of alarms in Recently 24 hours.
Secure Tunnel is Usable	It will show the number of Secure Tunnel groups under the account.
\oplus	Switch between Chinese and English
Ĭ	Show the service package you selected, users can add package to shopping cart through Devices function and Profile function.
Ļ	Show the alarm message(s) in latest 7 days
-	Show the profile or logout

Online payment process as below:

After click, it will show the detail information in shopping cart. 1.

Shopp	ping Cart				G
#	Package Name	Unit Price	Number	Price	Operation
1	DX-Service-T1GB-WW (SN : DX21000216140002) Data traffic fee of 1-year package for 1G bytes extra traffics per month between device and DIACloud	\$ 0.01	4	\$ 0.04	
2	DX-Service-S1MB-WW Cloud Storage fee of 5-years package for 200MB storage space in one account	\$ 0.01	1	\$ 0.01	ŧ
Total 2 if	tem(s) in Cart		Total Price	\$ 0.05	СНЕСКОИТ

2.

Click to generate an order. DIACloud provides the follow types of invoices.

- No need For Invoice
- Electric Invoice •
- Paper Invoice •

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Confirm Order			
Order Detail			
DX-Service-T1GB-CN (SN: DXR02010F270085)	¥200	×1	
			Total Price: ¥ 200
nvoice			
○ No need for Invoice	lice		
manest Tels (The prime of your concerning) (*			
Email *			
		BACK TO CART	COMPRESS OF DEP

3. Clic

Click CONFIRM ORDER, we accept PayPal payments and process credit cards on your order forms.

Payment Method	
Total to pay now \$0.05	
💿 🦻 PayPal	PAY NOW

5.2.3 Devices

Q	Search	G	Secure Tunnels All	•			• •	G
#	Status 🗸	Device Name	SN	Device Type	Storage Usage	Data Usage	Created	Operation
1	online	☐ DX2100_B0B4	DXR02010F210059	DX2100	0.00 MB	0.00 MB	2016-10-17 09:09	•••
2	offline	 DX2100_F0D3	DXR02010F270038	DX2100	0.00 MB	0.00 MB	2016-07-22 12:36	
3	offline	 DX2300_894D	DX23000216260012	DX2300	0.00 MB	0.00 MB	2016-07-28 22:31	
4	offline	 DX2300_89AB	DX23000216260059	DX2300	0.00 MB	0.00 MB	2016-09-08 13:34	•••
5	offline	 DX2300_894B	DX23000216260011	DX2300	0.00 MB	0.00 MB	2016-11-14 10:54	
6	offline	⊑o seyi	DX23000216260048	DX2300	0.00 MB	0.01 MB	2016-11-18 15:16	
Total	6 Device(s)							

It will switch to page of device list after clicking "Devices" in navigation bar.

ltem	Description
Q Search	You can filter the device base on you input the key word of the device name.
© All	Filter base on tunnel group, show all devices or only show the devices under user specified tunnel group.
Devices List	 Show the list of device. The information includes device's name, device's SN, device's type, storage usage, data usage and the time of binding device. Green represents that the device is online Gray represents the device is offline.
0	 Center is that all device is displayed currently, and you can switch to on-line device list after clicking this icon. Center is displayed currently, and you can switch to list of on-line device after clicking this icon.
Q	Show relevant position information of the device.
G	Refresh pages
	Show detail information of the device

• Q: It will show relevant position information of the device after you click "Q", which is shown as follows:



It will show the device name and SN of the device after clicking position icon in the map. When a large number of devices bound to the user's account, it will switch to other corresponding devices when user clicks blue arrows at the edge of the map.

• *** : More detail information about the device will be shown after clicking *** under the "Operation" on the right side of the device list:

1. **OVERVIEW:** The page will show the basic information of the device and the latest alarm message.

OVERVIEW	REGISTERS	SERVICES	MORE
IP Address		192.	168.0.200
Secure Tunnel			ffffff
Boot Time		2016-11-21	09:08 (+8)
RS232 Mode		Tr	ansparent
RS485 Mode			Closed
Modbus TCP			Closed
RSSI			-uil
Letest Marma			

Item	Description
Operation zone of device	 It represents that device is online if background color is blue, and device is offline if shows gray. DX2100_B0B4 : Show device names; it can switch device after clicking the drop down arrow. C: Realize refresh of device data on operation page. C: Close the operation page.
Page switching	Operation is divided into 4 pages: Overview Registers Package More Different buttons are used to switch different pagers.
Basic information zone	 Basic information is shown in Overview page. IP Address: IP address of a device; Tunnel Network: it means virtual network that has been bound to device; Boot Time: it means the boot time of device; RS232 Mode: work modes of RS232, including transparent transmission mode and slave station mode; RS485 Mode: work modes of RS 485, including transparent transmission mode, slave station mode and master station mode;

	 Modbus TCP: work modes of Modbus TCP, including Modbus TCP Server, Modbus TCP Client and Closed RSSI: it means signal strength of device which contains 5 bars; the larger the number of green bars is, the stronger the signal strength is;
Latest Alarms	 The latest five Alarm of the current device. "S" represents the state that the email has been sent; Green represents that the email has been sent successfully Red represents failure of sending.

2. **REGISTER:** The page will show and manage register value that uploaded from DX devices.

DX2100_E	0B4 🔻	с	×
OVERVIEW	REGISTERS SE	RVICES	MORE
Q Search		1/10	>
\$2048	233	07 08:58	:
\$2049	233	07 08:58	:
\$2050	15 2017-08-	14 11:32	÷
\$2051	12 2017-08-	14 11:33	:
\$2052	233	07 09:06	:
\$2053	0	07 08:58	:
\$2054	0	07 08:58	:
\$2055	0 /	07 08:58	11
\$2056	0	07 08:58	:
40057	0 /		

Item	Description
Q Search	The filtering function displays a list of keywords that match specific registers.
	Click And add the corresponding register and register value, then click "SAVE" button. DIACloud server will send the corresponding data to the device.
< 1/205 >	"<" Pervious page \cdot ">" Next page \cdot "1/205" show the current page of register table and the total amount of register table page.

Register Table	Show the register table, displaying a maximum of 10 registers per page.	
Register Name Show the register name, when you do not configure an alias in the register number is displayed.		
Register Value	Show the current register value and data transfer time.	
* * *	You can view the current register of historical data or delete the current register; it can also be configuring registers. P.S. If this register is not set to remeber history (device configuration page), the menu does not appear [History] after clicking icon.	

The History and Config options will be shown after clicking

DX2100_8	3084 🔻			c ×
OVERVIEW	REGISTERS	SERV	ICES	MORE
Q Search		~	1/1	0 >
\$2048	23	33 /	08:58	:
\$2049	20	33 / 017-08-07	08:58	ĩ
\$2050	1	5 /)17-08-14	11:32	History
\$2051	1:	2	11:33	Delete
\$2052	20	33 / 017-08-07	09:06	Config
\$2053	0 20	17-08-07	08:58	1
\$2054	0 20	17-08-07	08:58	1
\$2055	0	17-08-07	08:58	:
\$2056	0 20	17-08-07	D8:58	Ť
40000	0	1		1.2

Item	Description
History	It represents trend chart of historical data
Delete	User can delete all the data of a target register.
Config	User can customize name of register and content returned.

• **History :** The following figure will be shown after clicking "History":



Item	Description		
Date Start	Set the Start Date and query the historical data for a specific time.		
Date End	Set the End Date and query the historical data for a specific time.		
Register Value History Diagram	The latest trend chart of value of register;		
Time Axis	Users can change time scope of historical data by sliding "].		
•	Export the data to XLS.file.		

• Config : The following information will be shown after clicking "Config"

Register Configuration	×
Register Address	
2050	
length	
Word	
Alias Name *	
\$2050	
function(val) {	
JavaScript Template	
return val;	
)	
<	>

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ltem	Description				
	 Length can be set to Word, DWord and Float. DWord: DWord needs to use two DX internal registers. For example: \$2050 and \$2051 are set to DWord and combined as one. \$2050 will be LOW Byte and \$2051 will be HIGH Byte. 				
Length	\$2050 786447 2 2017-08-14 11:33				
	\$2052 233 2017-08-07 09:06				
	 Float: Float needs to use two DX internal registers. For example: \$2050 and \$2051 are set to DWord and combined as one. \$2050 will be LOW Byte and \$2051 will be HIGH Byte. 				
Alias Name	Users can set the display name of the register in "Alias Name"				
function(val)	function(val) is used for converting register values and similar to the grammar of function-supported JavaScript.				

There are two examples for "function (val)".

Example 1 : If you want to show the wind speed as 10m/s. (Data +unit, such as: speed 10m/s).
 Input the code: return val+"m/s" in function (val){...} as the following picture and save the configuration.

Register Configuration	×
Register Address	
2050	
length	
Word	
Alias Name *	
wind speed	
function(val) { JavaScript Template	
return val+"m/s";	
2	
<	>
	SAVE

• **Example 2**: If you want to convert the register value to the text such as the register value of 1 showing the text as 'NO'; register value of 2 showing the text as 'OFF'

Input the code in function (val) {...} as the following picture and Click "Save" botton.

Register Configuration	×
Register Address	
2050	
length	
Word	
Alias Name *	
YO	
function(val) {	
JavaScript Template	
if(val==1) return "ON";	
if(val==2) return "OFF";	
)	
<	>
	SAVE

3. **SERVICES:** This page shows the Device Data Usage, Device Storage Usage and Account Storage Usage for users.



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ltem	tem Description				
	• Device Data Usage: Show device traffic usage till now and total capacity.				
	Account Traffic Usage:				
	 Account traffic is the total amount of traffic showing additional purchases. 				
Data	2. Account traffic can be shared with all devices under your account.				
	 Before the device traffic is exhausted clould traffic, the account traffic will not be used. 				
	• User can purchase more traffic package for this accoount if need.				
	After successful payment, the moment is ready for use.				
	HISTORY Show the Data Usage History in past 12 months.				
	• Device Storage Usage: Show device storage usage till now and total				
	Account storage is the total amount of traffic showing additional				
Storage	purchases.				
	2. Account storage can be shared with all devices under your account.				
	 Before the device storage is exhausted strorage space, the account storage will not be used. 				
	• BUY : User can purchase more traffic package for this accoount if need.				
	After successful payment, the moment is ready for use.				

• After Click the ^{BUY} in Data field, it will show the traffic package select page. User can add a package to cart or checkout directly.

Add To Cart	×
DX-Service-T1GB-WW Data traffic fee of 1-year package for 12G bytes extra traffics one year between device and DIACloud Unit Price: \$ 0.01 Expired: 2018-08-14	Package Name DX-Service-T1GB-WW ▼ Number 1
	ADD TO CART CHECKOUT

• After Click the HISTORY, it will show the Data Usage History in past 12 months.

Data(M8)						
31					-	
4.1	IT (MI	11				
1011						
1						
-					-	

• After Click the ^{BUY} in Storage field, it will show the storage package select page. User can add a package to cart or checkout directly.

Add To Cart		×
DX-Service-S1MB-WW Cloud Storage fee of 5-years package for 200MB storage space in one account Unit Price: \$ 0.01 Expired: 2022-08-13	PáckageName DX-Service-S1MB-WW Number* 1	•
	ADD TO CART CHECK	QUT

4. **MORE:** This page will show the Serial Number, Software Version, Hardware Version, and IMEI for users.



ltem	Description	
Serial Number	Serial number of device	
Software Version	Version information of software	
Hardware Version	Version information of hardware	
IMSI	International Mobile Subscriber Identification Number.	
DELETE	Delete binding relationship between devices and the account. Devices need to be un-bund after clicking this button, and users can recover the device by rebinding.	

5.2.4 Alarm

Click the Alarm in the left menu. The warning information in the latest 7 days will be shown in this page. The warning information includes name and serial number of device, content of warning, status of email that is being sent (green" represents that the email has been sent successfully, and red represents fail.), time of warning and content record of warning.

٩	Search			G
#	Device Name	Alarm Message	Status	Created
1	VFDControl DXR02010F210059	IIIIIIIIWARNINGIIIIIIIIIIIIIVFD Status : Emergency Stopped Time : 2016/03 /1418:18:28 MS300 has been stopped, please contact the relevant member!!!	•	2016-03-14 18:18:31
2	VFDControl DXR02010F210059	IIIIIIIIWARNINGIIIIIIIIIIII VFD Status : Emergency Stopped Time : 2016/03 /1418:16:25 MS300 has been stopped, please contact the relevant member!!!		2016-03-14 18:16:41
3	HMI DXR02010F210039	0 1 2016/03/14 18:15:42		2016-03-14 18:16:15
4	VFDControl DXR02010F210059	IIIIIIIIWARNINGIIIIIIIIIII VFD Status : Emergency Stopped Time : 2016/03 /0913:28:10 MS300 has been stopped, please contact the relevant member!!!	-	2016-03-09 13:28:12
5	VFDControl DXR02010F210059	IIIIIIIIWARNINGIIIIIIIIIIII VFD Status : Emergency Stopped Time : 2016/03 /0913:27:57 MS300 has been stopped, please contact the relevant member!!!	-	2016-03-09 13:28:01
6	VFDControl DXR02010F210059	IIIIIIIIWARNINGIIIIIIIIIIII VFD Status : Emergency Stopped Time : 2016/03 /0913:26:46 MS300 has been stopped, please contact the relevant member!!!	-	2016-03-09 13:26:50
7	VFDControl DXR02010F210059	IIIIIIIIWARNINGIIIIIIIIIIIIIV VFD Status : Emergency Stopped Time : 2016/03 /0913:24:22 MS300 has been stopped, please contact the relevant member!!!	-	2016-03-09 13:24:32
8	HMI DXR02010F210035	0 1 2016/03/09 13:20:16	-	2016-03-09 13:20:47
9	VFDControl	IIIIIIIIWARNINGIIIIIIIIIII VFD Status : Emergency Stopped Time : 2016/03 /0819:01:37 MS300 has been stopped please contact the relevant member/II		2016-03-08 19:01:42

5.2.5 Secure Tunnels

Secure Tunnel is an important concept in DIACloud. Its objective is to realize virtual Switch across Internet; when device is bound to this network, it will be equivalent to add devices with one LAN port; when PC operates DIACom and creates a virtual network, PC and the device will be under the same switch at this time. It is shown as follows



Users can manager the tunnel network in this page. Interface is shown as follows:

Q	Search				+ C
#	Network Name 🛧	DHCP	DHCP IP Range	Status	Operation
1	DeltaNetwork	Enable	192.168.200.100 192.168.200.200	Normal	***
2	HM2016	Enable	192.168.199.100 192.168.199.200	Normal	
Tota	2 tunnel network(s)				

tem	Description
Q Search	Search the existed tunnel network.
Tunnel network List	List all tunnel network under this account.
+	Add a new tunnel network.
G	Refresh the tunnel network list.
	Edit the tunnel network.



Item	Description
Tunnel Network Information	 The detail information of tunnel network: Network Name: User can enter a name of tunnel network. DHCP Option: Automatic IP Address Assignment by DIACloud. DHCP IP Start: it represents the beginning IP in automatic IP distribution address pool of DIACloud DHCP IP End: it represents the ending IP in automatic IP distribution address pool of DIACloud.
	If the DHCP of thes tunnel network is enabled, click will export configurations include DIACloud Servier /account /Tunnel networks info to a file (default file name Provision_vInname_date_time.bin). Note: Detail configuration, please refer to 3.2 SD Card Quick Installation.
Î	Delete the current tunnel network
×	Close the current operation window.
SAVE	Save the configuration of tunnel network

5.2.6 Sub Users

All accounts that are registered through register page of DIACloud (<u>http://www.DIACloudSolutionscom/#/signup</u>) are main accounts. Every main account can create sub-accounts, and users can realize power separation and grouping management of device by conducting authorization for virtual network and DIACom by sub-account. Use can conduct addition and operation for sub-account through the "Sub Users" page.

Q	Search				+ C
	Account 1	Login to EthDirect	Status	Created	Operation
	3208467055@qq.com	Disabled	Activated	2016-02-24 20:02:29	
	444386414@qq.com	Enabled	Activated	2015-10-27 22:04:34	
	shinewaker@sina.cn	Enabled	Activated	2016-02-25 17:06:26	1000 C
	test_iot@126.com	Enabled	Activated	2016-02-29 17:35:54	

ltem	Description
Q Search	Search the sub users.
Sub Users List	Show the list of all sub users in main account.
+	Add a sub user.
G	Refresh the list of sub users.
	Modify the access control of the tunnel network.

•: User can modify the access control of the tunnel network.



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Item	Description
Sub Users Information	 Edit register: Allow the Sub User to modify register Login to DIACom: Allow the sub user to access the DIACom if the option is enabled. Tunnel Network: Allow the sub user to access the Tunnel Network if the option of Tunnel Network is checked.
Ī	Delete a sub user.
×	Close the current operation window.

• + : User can add sub users after clicking the "+" on the page, and the following interface will be shown after clicking the "+" in the page:

	×
Account	
diac0@163.com	
Edit register	
Login to DIACom	2
Secure Tunnels	
Project1	
Test_Hangzhou	
default1	
default	
	-
	SAVE

- 1. Fill in corresponding account information and conduct authorization for it.
- 2. The system will send an activation email which is attached with random login password to email box of sub user. The account status is "Un-activated" now.
- 3. Go to the mailbox, click the hyperlink to complete account activation operation, then sub user can login DIACloud with new account.
- 4. The page will link to the following page after clicking the activation link in the email:



5. When user login to DIACloud with main account and the sub user that we created has been activated.

5.2.7 Logs

This page will show the web operation information of some users. It includes: login IP, setup of register, API interface call of DIACloud and other information.

#	User Name	Log Content	Created
1	13616061750@163.com	push reg , cmd = 21300,1,2049,556	2016-04-01 11:12:41
2	13616061750@163.com	Login from 211.97.130.218	2016-04-01 11:11:36
3	13616061750@163.com	Login from 218.66.157.46	2016-04-01 10:45:41
4	13616061750@163.com	Login from 211.97.130.218	2016-04-01 10:43:23
5	13616061750@163.com	Edit tunnel network, id= 1247, name = test02, dhcp = 1	2016-04-01 10:38:20
6	13616061750@163.com	Logout	2016-04-01 10:37:55
7	13616061750@163.com	Login from 218.66.157.46	2016-04-01 10:37:54
8	13616061750@163.com	Login failed. username=13616061750@163.com from ip=218.66.157.46	2016-04-01 10:37:48
9	13616061750@163.com	Login failed. username=13616061750@163.com from ip=218.66.157.46	2016-04-01 10:37:41
10	13616061750@163.com	Login failed. username=13616061750@163.com from ip=218.66.157.46	2016-04-01 10:37:35
		10 👻 1 - 10 / 1134	<

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5.2.8 Orders

In this page, users can check all orders. Continue to pay for the unpaid orders or cancel the unpaid orders.

						C
#	Order NO.	Amount	Created	Status	Operation	
1	120160506042313747581	\$ 100	2016-05-06 16:23:13	Wait for Payment Order Detail	PAY	Cancel
2	120160506042243779488	\$ 99.99	2016-05-06 16:22:43	Wait for Payment Order Detail	PAY	Cancel
3	120160506110245733298	\$ 99.99	2016-05-06 11:02:45	Wait for Payment Order Detail	PAY	Cancel
4	120160505060220111921	\$ 0.01	2016-05-05 18:02:20	Finished Order Detail		
5	120160505052319041416	\$ 0.01	2016-05-05 17:23:19	Finished Order Detail		
6	120160505052149784903	\$ 0.01	2016-05-05 17:21:49	Finished Order Detail		
7	120160505052038875275	\$ 0.01	2016-05-05 17:20:39	Finished Order Detail		
8	120160505051413353285	\$ 0.01	2016-05-05 17:14:13	Finished Order Detail		
9	120160505051019658664	\$ 0.01	2016-05-05 17:10:20	Wait for Payment Order Detail	PAY	Cancel
10	120160505050752270363	\$ 0.01	2016-05-05 17:07:52	Wait for Payment Order Detail	PAY	Cancel

10 - 1-10/51 K < > >

Item	Description
Order Detail	View the order detail information
ΡΑΥ	Pay for the unpaid order
Cancel	Cancel the order, order will remove from the list.

Order detail

Order De	Drder Detail		×
Ŧ	Package Name	Unit Prices	Number
ī	DX-Service-S1MB-WW Cloud Storage fee of 6-years package for 200MB storage space in one account	\$ 0.01	*1
			Total Price \$ 0.01

• Payment Method: Currently, we only support PayPal payment for the world wide user.



5.2.9 Profile

In this page, QR Code of user, Package info, password management and other information will be shown.

		PACKAGE INFO CHANGE PASSWORD		
		Account Storage Usage	0.00 MB / 0.00 MB	BUY
		Account Traffic Usage	370.00 MB / 370.00 MB	BUY
Account	4 0126.com			

ltem	Description			
QR Code	You can get the part information of user by using DIACloud APP and scanning QR Code.			
Account	The current account information.			
Packeage info	 Show account traffic/storage usage till now BUY Users can purchase more traffic/storage package for this account if need Account traffic/storage will be shared to all devices under this account. 			
Change Password	Change the password of DIACloud user account. Note: parts of old users use password in 6 digits; the new password has been increased to 8 digits to improve safety of their accounts.			

Change Password page as below

	GTG LEI	PACKAGE INFO CHANGE PASSWORD		
		Account Storage Usage	0.00 MB / 0.00 MB	BUY
		Account Traffic Usage	370.00 MB / 370.00 MB	BUY
Account	@126.com			
1000.40.000				
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Chapter 6 DIACloud APP

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6.1 Introduction to DIACloud APP

DIACloud APP is the client software of DIACloud cloud platform running on mobile devices. The APP supports both iOS and Android mobile system, it enables users to view the collected field data, the locations of the field devices, and the alarms/notifications pushed by the industrial IOT cloud platform, so that keep users posted anytime and anywhere, and therefore improve the manageability of devices, optimize the device performance and efficiency, save the operation cost and enhance the service quality.



6.1.1 Select a Suitable Firmware Version

The APP can support the devices below:

Device Model	Firmware Version
DX-2100	V1.3.0.1 or above
DX-2300	V1.0.0.1 or above

6.1.2 DIACloud APP Installation

The DIACloud APP is available on Google Play and Apple APP Store.

Mobile Device	OS Version
Android	4.4.0 or above
iPhone	6.2.0 or above

6.2 DIACloud APP Function

6.2.1 DI ACloud APP Login

Enter the DIACloud account and password, then click the "Sign in" button to login the APP. Click the "Sign up" to register an account if you don't have one.

Chapter 6 Introduction to DIACloud APP



ltem	Description	
<u></u> -	Scan QR code, the QR code is generated by DIACloud Web portal, which carries the user name and password information. By scanning the QR code, user won't need to input user name. By default, the APP will connect the default DIACloud server in the cloud, if the APP is to connect other servers, QR code should be scanned to provision the APP.	
•	DIACloud account, Email format	
	The password of DIACloud account, click ^(O) to see what are you input	
Auto Login	gin Save the password and login the APP automatically	
Login	Login to App	
Sign up	Create a new DIACloud account	
Forget Reset the password if you forget it.		
Switch the language.		

6_

6.2.2 Device List

Device list will be shown after logging in the APP.

9:25 AM		● III <> ○	11:09 AM	£ © ? .ul +
	Device	4	Devic	e 💄
	Q Search device	Online 1	Q Search device	All 12
_	DX2300_7FDE Online SN:DXL02040F110010		DX2100_B308 Online SN:DXR02010E320008	
-	DX2100_E727 offline SN:DXR02030F2B0008			
and the	DX2100_077A offline sw:DxR02010E080006			
-	DX2100_3EDD Offline SN:DXR02010F0F0030			
	DX2100_E9AA Offline SN:DXR02010F0200260			
-	DX2100_E729 Offline SN:DXR02030F2B0010			
_	DX2100_B31B offline			
	Device	Abarm	Device	Abaro

Device tab and alarm tab will be shown in the APP. In the device tab, the device information will be shown, including the value of registers of the remote device. And the value of the register can be changed in the APP as well. In the alarm tab, users can read the alarm messages.

Item	Description	
•	Logoff or exit App	
Search	Search device base on key word	
All/Online	 Click "ALL" to show all device Click "Online" only show online device. Digit at the back is the all/online device count. 	
Device list	Display device online/offline status, device name, device serial number. Click it will go into device detail page	
Device	Switch to device list page	
Alarm	Switch to alarm list page.	

6.2.3 Device Details

Device details will be shown by selecting a device in the device list.



ltem	Description	
Туре	Type of the device	
Time	The time when the device is online.	
IP	IP Address of the device	
Account	The DIACloud account which activates the device.	
Mode	 The working mode of RS485 and RS232. RS232: Transparent transmission mode or Slave mode RS485: Transparent transmission mode /Slave mode /Master mode 	
Мар	Showing the location of the device on the map P.S. DX-2300 Series doesn't support this function.	

6.2.4 Registers View

Click [Register] on the device details page to switch to the register page

In the register page, the user can browse the collected data. The register data can be refreshed by the pull-down screen. When the number of registers is large, you can pull up the screen to display more data.

< DX:	2300_7FDE		
Details.	Regist	ers	
Addr.	Value		
电压	6	1	
2049	0	1	
2050	6	1	
2051	0	1	
2052	0	1	
2053	0	1	
2054	1446	1	
2055	o 2	1	
2056	o	1	

Item	Description	
C	Refresh the register data.	
1	Edit the register value.	

3:28 PM		ڪ ا ار. جَ نَ بِک
<	Edit	
Addr.:	voltage	
Value:	б	
Time:	2016-11-21 09:14:14	
	Cancel	OK

Click "ok" button, the register value will be pushed to the device.

6.2.5 Alarm List

Alarm criteria can be set on the device configuration web page. When the alarm criteria are met, the device will send out alarm messages. User can click the "Alarm" tab to read the alarm messages. When there are new alarm messages, the number of the unread messages will be shown on the icon.

- Alarm tab will be shown by clicking icon , the alarm messages in Red are unread messages. Digit in parentheses is the number of alarm messages.
- Pull down the APP to refresh the alarm list.



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