Industrial Device Server User's Manual

IDS-5042 Series



Version 1.00 Aug 2010.



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Getting to Know Your Device Server

1.1 About the IDS-5042 Serial Device Server



IDS-5042 / 5042+ / 5042-I+ is an innovative 4 ports RS232/422 /485 to 2 ports LAN device server with optional isolation RS-422 / 485 serial ports and one P.O.E PD Ethernet port.. Users are able to configure IDS-5042 by DS-Tool via LAN port. IDS-5042 offers many powerful features for HW & SW redundant functions. When the connection between master-link and LAN fails, the IDS-5042 can automatically switch to another LAN port within 10mS, and still guarantee a non-stop connection.

IDS-5042 also supports switch mode, users can use Daisy Chain to reduce the usage of Ethernet switch ports. Secondly, the IDS-5042 can

simultaneously transfer data into 5 host PCs. This feature can assure all critical data that saved in different host PCs to avoid Ethernet break or host PCs failure. Device also supports the data encryption with SSL, so it can assure the data transfer safely.

Thirdly, the IDS-5042 provides dual redundant power inputs on terminal block. IDS-5042 also provides NAT pass through function so that users are able to manage IDS-5042 inside or outside the NAT router. It is easy for different IP domain users to use IDS-5042. Therefore, IDS-5042 is the best communication redundant solution for current application of serial devices.

1.2 Software Features

High Speed Air Connectivity: WLAN interface support up to 54Mbps link speed



- Highly Security Capability: WEP/WPA/WPA2/802.1X/Radius/TKIP supported
- NAT-pass through: User can manage IDS-5042 through NAT router
- PPPoE for internet connection.
- Data Encryption with SSL for Security data transfer.
- DDNS for domain name service.
- Redundant Power Inputs: 12~48VDC on power jack and terminal block
- Redundant multiple host devices: 5 simultaneous in Virtual COM, TCP Server, TCP Client mode, UDP
- Secured Management by HTTPS and SSH,
- Versatile Modes: Virtual Com, Serial Tunnel, TCP Server, TCP Client, UDP
- Event Warning by Syslog, Email, SNMP trap, and Beeper
- Various Windows O.S. supported: Windows NT/2000/ XP/ 2003/VISTA

1.3 Hardware Features

- Redundant Power Inputs: 12~48 VDC on terminal block and power jack
- Operating Temperature: -10 to 60°C
- Storage Temperature: -40 to 85°C
- Operating Humidity: 5% to 95%, non-condensing
- Casing: IP-30
- 2 10/100Base-T(X) Ethernet port
- 1 optional P.O.E PD port (IDS-5042+ and IDS-5042-I+)
- 4 isolated serial port (IDS-5042I+)
- Dimensions(W x D x H) : 52 mm(W)x 106 mm(D)x 144 mm(H)



Hardware Installation

2.1 Install IDS-5042 on DIN-Rail

Each IDS-5042 has a Din-Rail kit on rear panel. The Din-Rail kit helps IDS-5042 to fix on the Din-Rail. It is easy to install the IDS-5042 on the Din-Rail:

2.1.1 Mount IDS-5042 on DIN-Rail











Step 2: Push the IDS-5042 toward the Din-Rail until you heard a "click" sound.

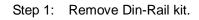


2.2 Wall Mounting Installation

Each IDS-5042 has another installation method for you. A wall mount panel can be found in the package. The following steps show how to mount the IDS-5042 on the wall:



2.2.1 Mount IDS-5042 on wall



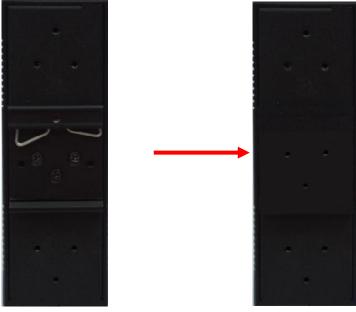


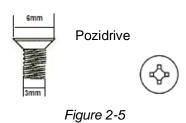
Figure 2-3





Step 2: Use 6 screws that can be found in the package to combine the wall mount panel. Just like the picture shows below:

The screws specification shows in the following two pictures. In order to prevent IDS-5042 from any damage, the size of screws should not be larger than the size that used in IDS-5042.







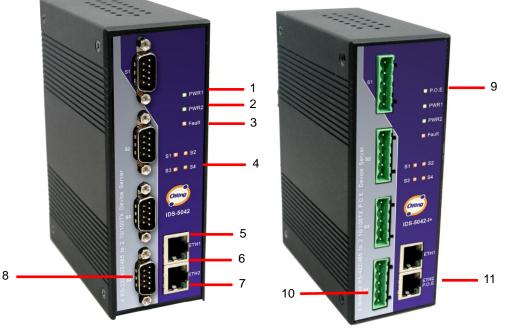
Step 3: Mount the combined IDS-5042 on the wall. .

Figure 2-6



Hardware Overview

3.1 Front Panel





- 1. LED for PWR1 and system status. When the PWR1 links, the green LED will be light on.
- 2. LED for PWR2 and system status. When the PWR2 links, the green LED will be light on.
- 3. LED for fault indicator. When fault occurred, this red LED will be light on.
- 4. LED for Serial ports status. When data transmitted, the green LED will be light on. When data received, the red LED will be light on.
- 5. LED of 10Base-T connection on Ethernet port.



- 6. 10/100Base-T(X) Ethernet port
- 7. LED of 100Base-TX connection on Ethernet port.
- 8. RS-232/422/485 serial port. Mode configured by DS-Tool.
- 9. LED for P.O.E. and system status. When the P.O.E. power connected, the green LED will be light on.. (IDS-5042+ and IDS-5042-I+)
- 10. RS-422/485 serial port with 2KV isolation. Mode configured by DS-Tool.
- 11. 10/100Base-T(X) Ethernet port. (P.O.E. PD port, IDS-5042+ and IDS-5042-I+)

3.2 Front Panel LEDS

The following table describes the labels that stick on the IDS-5042.

| LED | Color | Status | Description | |
|---------|-------------|--------------|---|--|
| | | On | Power supplied over Ethernet Cable | |
| P.O.E | Green / Red | Red Blinking | Indicates and IP conflict, or DHCP or BOOTP server did not respond properly | |
| DMD4 | Green/Red | On | DC power 1 activated. | |
| PWR1 | Green/Red | Red blinking | Indicates an IP conflict, or DHCP or BOOTP server did not respond properly | |
| DM/DO | Green/Red | On | DC power 2 activated. | |
| PWR2 | | Red blinking | Indicates an IP conflict, or DHCP or BOOTP server did not respond properly | |
| Fault | Red | On | Fault event occurred. | |
| S1 ~ S4 | Green | Blinking | Serial port is transmitting data | |
| 01 ~ 04 | Red | Blinking | Serial port is receiving data | |



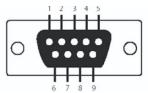
| ETH1 | Green/Amber | Green On/Blinking | 100Mbps LNK/ACT |
|------|-------------|-------------------|-----------------|
| | | Amber On/Blinking | 10Mbps LNK/ACT |
| ETH2 | Green/Amber | Green On/Blinking | 100Mbps LNK/ACT |
| | | Amber On/Blinking | 10Mbps LNK/ACT |

Table 3-1 Front panel LEDs

3.3 Serial Ports

There 4 serial ports on the front panel of IDS-5042 shown as below:

DB9 connector



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

Table 3-2 Pin assignment



| • | • | • | • | • |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

| Pin # | RS 422 | RS 485 (4 wire) | RS 485 (2 wire) |
|-------|--------|----------------------|----------------------|
| 1 | GND | GND | GND |
| 2 | RXD - | RXD - | |
| 3 | RXD + | RXD + | |
| 4 | TXD - | TXD - | DATA - |
| 5 | TXD + | TXD + | DATA + |

3.4 **Bottom Panel**

The bottom panel components of IDS-5042/42+/42-I+ are shown as below:

- 1. Terminal block includes: PWR1, PWR2 (12 ~ 48V DC) and Relay output (1A@24VDC).
- 2. Reset button. 5 seconds for factory default.

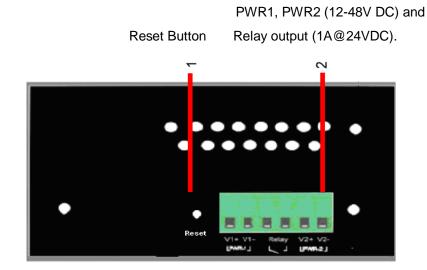


Figure 3-2 Bottom Panel



3.5 Rear Panel

The rear panel components of IDS-5042 are shown as below:

- 1. Screw holes for wall mount kit.
- 2. Din-Rail kit

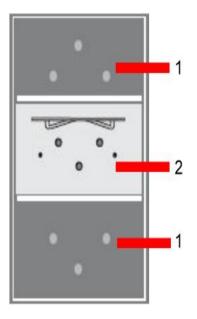


Figure 3-3 Rear Panel



Cables

4.1 Ethernet Cables

The IDS-5042 has standard Ethernet ports. According to the link type, the IDS-5042 use CAT 3, 4, 5,5e UTP cables to connect to any other network device (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

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

Table 4-1 Cable Types and Specifications

100BASE-TX/10BASE-T Pin Assignments

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



| Pin Number | Assignment |
|------------|----------------------|
| 1 | TD+ |
| 2 | TD- |
| 3 | RD+ |
| 4 | P.O.E. power input + |
| 5 | P.O.E. power input + |
| 6 | RD- |
| 7 | P.O.E. power input - |
| 8 | P.O.E. power input - |

Table 4-2 RJ-45 Pin Assignments

The IDS-5042 supports auto MDI/MDI-X operation. You can use a straight- through cable to connect PC to IDS-5042. The following table below shows the 10BASE-T/ 100BASE-TX MDI and MDI-X port pin outs.

| Pin Number | Number MDI port MDI-X por | |
|------------|---|----------------------|
| 1 | TD+(transmit) | RD+(receive) |
| 2 | TD-(transmit) RD-(receive) | |
| 3 | RD+(receive) TD+(transmit) | |
| 4 | P.O.E. power input + P.O.E. power input + | |
| 5 | P.O.E. power input + P.O.E. power input + | |
| 6 | RD-(receive) | TD-(transmit) |
| 7 | P.O.E. power input - | P.O.E. power input - |
| 8 | P.O.E. power input - P.O.E. power input - | |

Table 4-2 MDI / MDI-X pins assignment

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



Management Interface

5.1 DS-Tool

DS-Tool is a powerful Windows utility for DS series. It supports device discovery, device configuration, group setup, group firmware update, monitoring functions...etc. It is easy for you to install and configure devices over the network.

5.1.1 Install IDS-Tool

Step 1: Execute the Setup program, click "start" after selecting the folder for DS-Tool.

| 월 DS-Tool Insta | ller | | | X |
|-----------------|--|-------|--------------|---|
| ORing | Destination Directory C:\Program Files\DS-Tool Required: 7543 K Available: 210228 K | | Browse | |
| | | Start | <u>E</u> xit | |

Figure 5-1



Step 2: When installation complete successfully, then click "OK".

Figure 5-2

Step 3: Check for your selection.



Figure 5-3



5.1.2 Using DS-Tool

5.1.2.1 Explore device servers

DS-Tool will broadcast to the network and search all available DS devices in the network. The default IP address of device is "**192.168.10.2**", and selects the searching device you wish to use and press "**Add**" button.

You can set static IP address or in DHCP client mode to get IP address automatically. Finally, click "**OK** "button to add the device.

| 😔 DS-Tool | |
|---|--|
| File Device Configuration COM Co | onfiguration Options Help |
| Broadcast DS-Tool Device List VCDM List Setup Wizard IP Collection System Log | P COM Broadcast Searching MAC 00:AA:BB:CC:DD:77 Original IP 192.168.10.2 ✓ 192.168.10.2 ✓ Using Static IP IP Address 192.168.10.2 Netmask 255.255.0 Gatway 192.168.10.2 DNS1 DNS2 EQ. Auto Scan Password |
| | Cancel Clear All Select All Add |
| | A lot of IPs need to be re-config? Click here Your best choice. Group IP Wizard. |
| | |

Figure 5-4



5.1.2.2 Configure device servers

General settings

This page includes the setting of device name, SNTP server and Auto IP Report.

| Model IDS-5642+ | DDNS Notification Managem | | Power 1 2 2 E |
|--|-----------------------------------|---------|--------------------------------------|
| LAN IP Address 192.168.0.38 | LAN MAC Address 00:00:56:04:02:07 | Version | Networking 1 📩 2 🛄 2 Locate On |
| Device Name/Location DeviceServer-DEFAULT | | | |
| 🔲 Using SNTP Time Server | 🔲 Auto IP Report | | |
| | | | |
| | | | |
| | | | |
| | | | |
| 🧿 Refresh | | | 🐟 Apply Only 🌧 Apply and S |

Figure 5-5 General settings

The following table describes the labels in this screen.

| Label | abel Description | |
|----------------------|---|--|
| Device Name/location | You can set the device name or related information. By clicking "Locate On" button you can locate the serial server's position. | |
| Set SNTP | Input the SNTP server domain name or IP address, port and select the Time zone. | |



| Set Auto IP Report | By Clicking the "Get current Host" button you will get your local IP, and then set the |
|--------------------|--|
| | Report interval time. The device server will report its status periodically. |

Table 5-1 General settings

At IP collection option show the device server status. The report interval is 0 indicate disable this setting (default). But you can set the other IP or Port.

| Se | ecurity | | | |
|---------------------|--------------|------------------|------------|-----------------------------|
| General Security Ne | etworking DI | DNS Notification | Management | Upgrade Firmware Save/Load |
| Access IP Table | | | | Password |
| IP1 | Mask | Г | Enabled | New Password |
| IP2 | Mask | Г | Enabled | J |
| IP3 | Mask | Г | Enabled | Confirm New Password |
| IP4 | Mask | Г | Enabled | l Old Password |
| IP5 | Mask | F | Enabled | |
| IP6 | Mask | Γ. | Enabled | |
| IP7 | Mask | [| Enabled | Change Password |
| IP8 | Mask | [| Enabled | |
| IP9 | Mask | F | Enabled | |
| IP10 | Mask | Γ. | Enabled | |
| IP11 | Mask | [| Enabled | |
| IP12 | Mask | [| Enabled | |
| IP13 | Mask | Г | Enabled | |
| IP14 | Mask | Г | Enabled | |
| IP15 | Mask | Г | Enabled | |
| IP16 | Mask | Г | Enabled | |
| | | | | |
| | | | | |
| | | | | |
| 🧐 Refresh | | | | Apply Only 😽 Apply and Save |

Figure 5-6 Security

| The following table describes the labels in this scree | en. |
|--|-----|
|--|-----|

| Label | Description |
|-----------------------|--|
| Accessible IP Setting | To prevent unauthorized access by setting host IP addresses and network masks. |



| Password setting | You can set the password to prevent unauthorized access from your server. | Factory |
|------------------|---|---------|
| rassword setting | default is no password. | |

Table 5-2 Security

Network Setting

Device can connect the Network by wire. You must assign a valid IP address for DS before attached in your network environment. Your network administrator should provide you the IP address and related settings. The IP address must be unique within the network (otherwise, DS will not have a valid connection to the network). You can choose from three possible "**IP configuration**" modes: Static, DHCP/BOOTP. The Factory Default IP address is "**192.168.10.2**"

| | | | Notification Management Upgrade Firmware Save/Load |
|---------|---------------|---------------------|--|
| | PPPoE | IP 🔲 Using DHCP/BO | отр |
| | - Setting: | | |
| IP Add | dress | 192.168.0.34 | |
| Netma | ask | 255.255.255.0 | |
| Gatwa | зу | 192.168.0.1 | |
| DNS1 | | 192.168.0.1 | |
| DNS2 | 2 | | |
| Etherne | t Mode | | |
| | edundani | t Mode 🕜 Switch Mod | e |
| | | | |
| | | | |
| | | | |
| No Re | fresh | | 🕹 Apply Only 🛛 🗼 Apply and Save |
| | | | |

Figure 5-7 Network Setting



| Label | Description |
|-------------------|--|
| Using DHCP/BOOTP | IP Address automatically assigned by a DHCP server in your network. |
| Static IP Address | Manually assigning an IP address. |
| Subnet Mask | All devices on the network must have the same subnet mask to communicate on the network. |
| Gateway | Enter the IP address of the router in you network. |
| DNS Server | Enter the IP address of the DNS server, The DNS server translates domain names into |
| DNS Server | IP address. |
| | Redundant: |
| | When the connection between master-link and LAN fails, the DS can automatically |
| Switch Mode | switch to another LAN port within10mS, and still guarantees a non-stop connection |
| | Switch: |
| | Daisy Chain support to reduce usage of switch ports. |

The following table describes the labels in this screen.

Table 5-3 Network setting

PPPoE

PPPoE (Point-to-Point Protocol over Ethernet), Device can use PPPoE mode to connect the Network. Input the **"username**" and **"Password**", then click **"Connect**" button. If the device has been connected, the **"Link Status**" will become the "Link up" and device will get an IP address from PPPoE server. Click "**Disconnect**" button to disconnect the PPPoE connection.



| Wire PPPoE | |
|---------------|-----------------------------------|
| PPPoE Setting | |
| User Name | |
| Password | |
| Link Status | Link down |
| Connec | Disconnect |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| 崎 Refresh | 🛛 🕹 Apply Only 🛛 🗼 Apply and Save |

Figure 5-8 PPPoE Setting

DDNS

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



| General Security Networking DDNS Notification Management Upgrade Firmware Save/Load |
|---|
| |
| I DDNS Enable |
| DDNS Setting |
| Service Provider dyndns-static |
| Hostname |
| Account |
| Password |
| Check WAN IP Schedule Every Hour Start at -5368 (Hour): -1879 (Minute) |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| Sefresh Apply Only Apply and Save |

Figure 5-9 DDNS Setting

The following table describes the labels in this screen.

| Label | Description |
|------------------|--|
| Service Provider | Choose the DDNS service Provider |
| Hostname | You must first apply an account from the DDNS service Provider such as www.dyndns.org, |
| | then register with the dynamic DNS service. Input the fixed hostname you got from the |
| | DDNS service. |
| Account mand | Input the Account and Password you have registered from the DDNS service Provider. |
| Password | |
| Check WAN IP | Davida will shock the ID address Status at interval time you get |
| Schedule | Device will check the IP address Status at interval time you set. |

Table 5-4 DDNS setting



Notification

Specify the events that should be notified to the administrator. The events can be alarmed by E-mail, SNMP trap, or system log.

| General Security Networking DDNS Notification Management Upgrade Firmward | e Save/Load |
|---|-------------|
| SNMP Trap 🔲 Email Notification 🔽 Syslog Notification | |
| Syslog Setttings Notified Items Hardware Reset (Cold Start) DI_1 Changed Software Reset (Warm Start) DI_2 Changed | |
| Login Failed DI_3 Changed IP Changed DI_4 Changed DO_1 Changed Access IP Blocked DO_2 Changed Redundant Power Changed | |
| System Log Settings Server IP Port | |
| 192.168.0.33 514 Using Current Host's Log Server | |
| | |
| | |
| | |
| S Refresh | Apply Only |

Figure 5-10 Notification

The following table describes the labels in this screen.

| Label | Description |
|---------------------|--------------------------------|
| SNMP Trap | To notify events by SNMP trap. |
| Email Notification | To notify events by Email. |
| Syslog Notification | To notify events by Syslog. |
| Notify items | Events to be notified. |



| Apply | Apply current setting. |
|----------------|---------------------------------|
| Apply and Save | Apply and save current setting. |

Table 5-5 Notification

Management

| General Security | Networking DDN | IS Notification | Management | Upgrade Firmware | Save/Load | | |
|------------------|----------------|-----------------|------------|------------------|-----------|------|------------------|
| 🔽 Web Manag | ement Enable | Goto Web M | lanagement | | | | |
| 🔽 Telnet Mana | igement Enable | Goto Telnet I | | | | | |
| 🔽 SNMP Mana | agement Enable | | | l . | | | |
| SNMP Manager | nent Settings | | | | | | |
| Community | | | | | | | |
| Location | | | | | | | |
| Contact | | | | | | | |
| Trap Server1 | | | | | | | |
| Trap Server2 | | | | | | | |
| Trap Server3 | | | | | | | |
| Trap Server4 | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| 🍤 Refresh | | | | | 🌛 Apply (| Inly | 🗼 Apply and Save |

Figure 5-11 Management

The following table describes the labels in this screen.

| Label | Description | | | |
|-------------------|--|--|--|--|
| Web Management | To enable management from Web. Click "Goto Web | | | |
| Enable | Management" button to access web. | | | |
| Telnet Management | To enable management by Telnet. Click "Goto Telnet | | | |



| Enable | Management" button to execute Telnet command. | | | |
|-----------------|---|--|--|--|
| SNMP Management | To enable management by SNMP. | | | |
| Enable | To enable management by SNMF. | | | |
| SNMP Management | To configure SNMP related settings | | | |
| Settings | To configure SNMP related settings. | | | |

Table 5-6 Management

Upgrade Firmware

| General Security Net | working DDNS | Notification Ma | anagement | Upgrade I | Firmware | Save/Load | |
|----------------------|--------------|-----------------|-----------|-----------|----------|-----------|--|
| Firmware Image | | | _ | | | | |
| | | | Brov | wsing | Upgrade | • | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |



The following table describes the labels in this screen.

| Label | Description |
|----------|------------------------------|
| Browsing | Browse the file and upgrade |
| Upgrade | Enable the firmware upgrade. |

Table 5-7Upgrade Firmware



| Save/Load | |
|---|---------------------------------|
| General Security Networking DDNS Notification Management Upgrade Firmware | Save/Load |
| Save Configuration to Flash | |
| Load Default | |
| Reboot Device | |
| Import/Export Configuration | |
| | |
| | |
| Refresh | 🌛 Apply Only 🔒 🍌 Apply and Save |

Figure 5-13 Save / Load

| Label | Description | | | | |
|-----------------------|---|--|--|--|--|
| Save Configuration to | Course surrent configuration into flack memory | | | | |
| Flash | Save current configuration into flash memory. | | | | |
| | Load default configuration except the network settings. If you want to load all factory | | | | |
| Load Default | default, you need to press "Reset" button on the device (Hardware restore). | | | | |
| Reboot Device | Reboot the device server (warm start). | | | | |



| Import Configuration | Restore the previous exported configuration. |
|----------------------|---|
| Export Configuration | Exported current configuration to a file to backup the configuration. |

Table 5-8 Save / Load

5.1.2.3 Configure serial port

Serial Settings

| Serial Settings Service Mode Notification | | | |
|--|--|--|--|
| port1 | | | |
| Port Alias Port0 | | | |
| , | | | |
| Baudrate 38400 V Stop Bits 1 V Performance Throughput V | | | |
| Parity No Flow Control No Flow | | | |
| Data Bits 8 Interface RS232 | | | |
| Delimiter Settings | | | |
| Serial to Ethernet Ethernet to Serial | | | |
| | | | |
| Delimiter 1 (HEX) Delimiter 2 Delimiter 3 Delimiter 4 (HEX) Delimiter 4 (HEX) Delimiter 4 (HEX) | | | |
| Enabled Enabled Enabled | | | |
| Flush Serial to Ethernet Data Buffer After | | | |
| 0 (0-65535) ms | | | |
| The received data will be gueueing in the buffer until all the delimiters are | | | |
| matched. When the buffer is full (4K Bytes) or after "flush S2E data buffer" timeout, the data will also be sent. | | | |
| Force TX interval time | | | |
| 0 (0-65535)ms data 1 interval time data 2 interval time data 3 | | | |
| The received data will be queueing in TX buffer until TX interval time is timeout or TX buffer is full (4K Bytes) , the data will also be sent. 0 is disable. | | | |
| | | | |
| Pefresh Save | | | |

Figure 5-14Serial Settings



| Label | Description | | |
|--------------------|---|--|--|
| Port Alias | Remark the port to hint the connected device. | | |
| Interface | RS232/RS422 / RS485(2-wires) / RS485(4-wires) | | |
| Baud rate | 110bps/300bps/1200bps/2400bps/4800bps/9600bps/19200bps/ | | |
| | 38400bps/57600bps/115200bps/230400bps/460800bps | | |
| Data Bits | 5, 6, 7, 8 | | |
| Stop Bits | 1, 2 (1.5) | | |
| Parity | No, Even, Odd, Mark, Space | | |
| Flow Control | No, XON/XOFF, RTS/CTS, DTR/DSR | | |
| Derformance | Throughput: This mode optimized for highest transmission speed. | | |
| Performance | Latency: This mode optimized for shortest response time. | | |
| | Delimiter: | | |
| | You can define max. 4 delimiters (00~FF, Hex) for each way. The data will be | | |
| | hold until the delimiters are received or the option="Flush Serial to Ethernet data | | |
| | buffer" times out. 0 means disable. Factory default is 0. | | |
| Serial to Ethernet | | | |
| | Flush Data Buffer After: | | |
| | The received data will be queuing in the buffer until all the delimiters are matched. | | |
| | When the buffer is full (4K Bytes) or after "flush S2E data buffer" timeout the data will | | |
| | also be sent. You can set the time from 0 to 65535 seconds. | | |
| | Delimiter: | | |
| | You can define max. 4 delimiters (00~FF, Hex) for each way. The data will be | | |
| | hold until the delimiters are received or the option "Flush Ethernet to Serial data | | |
| | buffer " times out. 0 means disable. Factory default is 0. | | |
| Ethernet to Serial | | | |
| | Flush Data Buffer After: | | |
| | The received data will be queuing in the buffer until all the delimiters are | | |
| | matched. When the buffer is full (4K Bytes) or after "flushE2S data buffer" | | |
| | timeout the data will also be sent. You can set the time from 0 to 65535 seconds. | | |

The following table describes the labels in this screen.



| | Force TX interval time is to specify the timeout when no data has been transmitted. When the timeout is reached or TX buffer is full (4K Bytes), the queued data will be sent. | |
|------------------------|---|--|
| Force TX Interval Time | | |
| | 0 means disable. Factory default value is 0. | |

Table 5-9 Serial settings

Service Mode – Virtual COM Mode

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

| Serial Settings Service Mode Notification | |
|--|---|
| Service Mode Virtual COM Mode | |
| Virtual COM Mode | |
| −Virtual COM Settings 「Encryption with SSL | Misc. Idle Timeout 0 (0-65535) Seconds |
| Data Port 4000 Edit IP Port Number Control Port 4001 Map Virtual COM | Alive Check 420 (0-65535) Seconds |
| Multilink | |
| Max Connections | |
| Destination Host VCOM Name | |
| Waiting for VCOM connect | Goto VCom Unmap VCom |
| 2 | Goto VCom Unmap VCom |
| 3 | Goto VCom Unmap VCom |
| 4 | |
| 9 Refresh | 👟 Apply Only 🗼 Apply and Save |

Figure 5-15 Virtual COM



| Label | Description | | |
|---------------------|---|--|--|
| Encryption with SSL | Use SSL to encrypt data. | | |
| Map Virtual COM | Select a Virtual COM Name to map on. | | |
| Max Connection | The number of Max connection can support simultaneous connections are 5, default values is 1. | | |
| Idle Timeout | When serial port stops data transmission for a defined period of time (Idle Timeout), the connection will be closed and the port will be freed and try to connect with other hosts. 0 indicate disable this function. Factory default value is 0. If Multilink is configured, only the first host connection is effective for this setting. | | |
| Alive Check | The serial device will send TCP alive-check package in each defined time interval (Alive Check) to remote host to check the TCP connection. If the TCP connection is not alive, the connection will be closed and the port will be freed. 0 indicate disable this function. Factory default is 0. | | |

The following table describes the labels in this screen.

Table 5-10 Virtual COM

*Not allowed to mapping Virtual COM from web

Service Mode – TCP Server Mode

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



| Serial Settings Service Mode | Notification | | | |
|------------------------------|--------------------|-------------------------|------------------|----------------|
| port1 Service Mode TCP Se | rver Mode 🗾 💌 | | | |
| TCP Server Mode | | | | |
| TCP Server Settings | Telnet Negotiation | Misc. Idle Timeout 0 | (0-65535) Second | ds |
| Data Port 4000 | 🕰 Auto Scan | Alive Check 40 | (0-65535) Second | st |
| Control Port 4001 | | | | |
| Multilink | | | | |
| Max Connections | 崎 Refresh | | | |
| Destination Host | | | | |
| | 📃 💪 Disconne | ct | | |
| 2 | Disconne | ct | | |
| 3 | Disconne | ct | | |
| 4 | Disconne | ct | | |
| 5 | Risconne | et | | |
| 崎 Refresh | | | 🜛 Apply Only | Apply and Save |

Figure 5-16 TCP Server mode

| Label | Description |
|---------------------|--|
| Encryption with SSL | Use SSL to encrypt data. |
| Data Port | Set the port number for data transmission. |
| Telnet Negotiation | Full Telnet command / symbol compatible |
| Auto Scan | Scan the data port automatically. |
| Idle Timeout | When serial port stops data transmission for a defined period of time (Idle Timeout), the connection will be closed and the port will be freed and try to connect with other hosts. 0 indicate disable this function. Factory default value is 0. If Multilink is configured, only the first host connection is effective for this setting. |
| Alive Check | The serial device will send TCP alive-check package in each defined time interval (Alive Check) to remote host to check the TCP connection. If the TCP connection is not alive, the connection will be closed and the port will be freed. 0 indicate disable this function. Factory default is 0. |

The following table describes the labels in this screen.



| Max Connection | The number of Max connection can support simultaneous connections are 5, default |
|----------------|--|
| | values is 1. |

Table 5-11 TCP Server mode

Service Mode – TCP Client Mode

In TCP Client Mode, device can establish a TCP connection with server by the method you have settled (Startup or any character). After the data has been transferred, device can disconnect automatically from the server by using the TCP alive check time or Idle time settings.

| Serial Settings Service Mode Notification |
|--|
| port1 Service Mode TCP Client Mode |
| TCP Client Mode |
| TCP Client Settings Misc. Encryption with SSL Idle Timeout 0 (0-65535) Seconds |
| Destination Host Port 4000 4000 Auto Scan Connect on Startup |
| Image: Control Port 4001 Multilink 1 |
| Destination Host Port |
| Auto Scan |
| 2 eQ. Auto Scan |
| 3 eQ. Auto Scan |
| 4 Auto Scan |
| Sefresh Apply Only Apply and Save |

Figure 5-17 TCP Client Mode

| The following table describes the labels in this | screen. |
|--|---------|
|--|---------|

| Label | Description | | |
|---------------------|--------------------------|--|--|
| Encryption with SSL | Use SSL to encrypt data. | | |



| Destination Host | Set the IP address of host. | | |
|--------------------|---|--|--|
| Port | Set the port number of data port. | | |
| | When serial port stops data transmission for a defined period of time (Idle | | |
| | Timeout), the connection will be closed and the port will be freed and try to | | |
| Idle Timeout | connect with other hosts. 0 indicate disable this function. Factory default | | |
| | value is 0. If Multilink is configured, only the first host connection is effective | | |
| | for this setting. | | |
| | The serial device will send TCP alive-check package in each defined time | | |
| Alive Check | interval (Alive Check) to remote host to check the TCP connection. If the TCP | | |
| | connection is not alive, the connection will be closed and the port will be freed. | | |
| | 0 indicate disable this function. Factory default is 0. | | |
| Connect on Startun | The TCP Client will build TCP connection once the connected serial device is | | |
| Connect on Startup | started. | | |
| Connect on Any | The TCP Client will build TCP connection once the connected serial device | | |
| Character | starts to send data. | | |

Table 5-12TCP Client mode

Service Mode – UDP Mode

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



| Serial Settings Service Mode Notification |
|--|
| Service Mode |
| UDP Mode |
| UDP Settings Listening Port 4004 Auto Scan |
| Destination Host Begin Destination Host End Sending Port |
| 1 192.168.0.1 to 192.168.0.100 10000 EQ. Auto Scan |
| 2 to 2 Auto Scan |
| 3 to 20 Auto Scan |
| 4 to eQ. Auto Scan |
| |

Figure 5-18 UDP mode

Notification

Specify the events that should be noticed. The events can be noticed by E-mail, SNMP trap or system log.



| Serial Settings Service Mode Noti | ification |
|--|---|
| 🔽 SNMP Trap 🔽 Er | mail Notification 🔽 Syslog Notification |
| SNMP Settings Email Settings Sy | vslog Settings |
| Notified Items | |
| DCD Changed | CTS Changed |
| DSR Changed | C Port Connected |
| 🔲 RI Changed | Port Disconnected |
| – Email to Mail Server: Mail to: | |
| | |
| | |
| S Refresh | 👌 Apply Only 🛛 🗼 Apply and Save |

Figure 5-19 Notification

| The following table describes the labels in this screen. |
|--|
|--|

| Label | Description | | | |
|----------------|--|--|--|--|
| DCD abanged | When DCD (Data Carrier Detect) signal changes, it indicates that the modem | | | |
| DCD changed | connection status has changed. Notification will be sent. | | | |
| DSD obspaced | When DSR (Data Set Ready) signal changes, it indicates that the data communication | | | |
| DSR changed | equipment is powered off. A Notification will be sent. | | | |
| DI abangod | When RI (Ring Indicator) signal changes, it indicates that the incoming of a call. A | | | |
| RI changed | Notification will be sent. | | | |
| CTC shanged | When CTS (Clear To Send) signal changes, it indicates that the transmission between | | | |
| CTS changed | computer and DCE can proceed. A notification will be sent. | | | |
| | In TCP Server Mode, when the device accepts an incoming TCP connection, this event | | | |
| Port connected | will be trigger. In TCP Client Mode, when the device has connected to the remote host, | | | |
| | this event will be trigger. In Virtual COM Mode, Virtual COM is ready to use. A | | | |
| | notification will be sent. | | | |



| | In TCP Server/Client Mode, when the device lost the TCP link, this event will be trigger. | | |
|-------------------|---|--|--|
| Port disconnected | In Virtual COM Mode, When Virtual COM is not available, this event will be trigger. A | | |
| | notification will be sent. | | |

Table 5-13 Notification

5.2 Configuration by Web Browser

5.2.1 CONNECT TO THE WEB PAGE

Step 1: Input the IP address of DS with "https://192.168.10.2" in the Address input box of IE.



Step 2: Click "Yes" button on the dialog box.

Figure 5-20 Certificate



| Connect to 192.1 | 68. 10. 2 |
|--------------------|----------------------|
| | GA |
| cgi-bin | |
| <u>U</u> ser name: | 🖸 admin 🔍 |
| <u>P</u> assword: | ••••• |
| | Remember my password |
| | OK Cancel |

Step 3: Input the name and password, then click "OK".

Figure 5-21 Certificate

*Only if password is set.

Step 4: The system information will be shown as below.

| Industrial Device Server | | | | | |
|--|--------|--------------------|-------------------|--|--|
| open all Serial Device Server System Port Serial Setting Management Save/Reboot Help | Syster | System Information | | | |
| | | IP Address | 192.168.10.2 | | |
| | | MAC Address | 00:00:56:04:02:07 | | |
| | | Firmware Version | 1.00 | | |
| | | | | | |

Figure 5-21 System information



5.2.1.1 System

| Time (| (SNTP) | | | |
|---|---------|-----------------|-------------------------|--|
| | lustria | al Devic | e Server | |
| open all ভ Serial Device Server ⊂ Or System ভ Time(SNTP) ভ IP Configuration | SNT | P Configuration | | |
| DDNS Configuration User Authentication | | Name | DeviceServer-DEFAULT | |
| | | Time | | |
| i Save/Reboot i Help | | SNTP | © Enable ⊙ Disable | |
| | | Time Zone | (GMT+08:00)Taipei | |
| | | Local Time | Thu Jan 1 08:03:58 1970 | |
| | | Time Server | pool.ntp.org Port 123 | |
| | | Console | | |
| | | Telnet Console | ⊙ Enable ○ Disable | |
| | | Apply | | |
| | | | | |

Figure 5-22 Time (SNTP)

| Label | Description |
|-------------|---|
| Name | You can set the name of DS. |
| SNTP | Enable the SNTP server. |
| Time zone | After you set the SNTP enable, select the time zone you located. |
| Time server | Input SNTP server domain name or IP address and Port. |
| Quina da | Telnet Console (SSH) is included for security reasons. In some cases, you may need |
| Console | to disable this function to prevent unauthorized access from internet. The factory default is enable. |

The following table describes the labels in this screen.

Table 5-14 Time (SNTP)



IP Configuration

You must assign a valid IP address for DS before attached in your network environment. Your network administrator should provide you with the IP address and related settings. The IP address must be unique and within the network (otherwise, DS will not have a valid connection to the network). You can choose from three possible "**IP configuration**" modes: Static, DHCP/BOOTP. The Factory Default IP address is "**192.168.10.2**"

| | Iustrial Device S | erver |
|---|-------------------------|---------------|
| open all ເ≩ Serial Device Server ⊂ • System ເ≩ Time(SNTP) (≩ IP Configuration | IP Configuration | |
| DDNS Configuration User Authentication | IP Configuration | DHCP/BOOTP V |
| Port Serial Setting | IP Address | 192.168.0.82 |
| 🗃 Help | Netmask | 255.255.255.0 |
| | Gateway | 192.168.0.1 |
| | DNS Server 1 | 192.168.0.1 |
| | DNS Server 2 | |
| | Auto IP Report | |
| | Auto Report to IP | |
| | Auto Report to TCP Port | 0 |
| | Auto Report Interval | 0 seconds |
| | Ethernet Mode | |
| | Ethernet Mode | |
| | Apply | |
| | | |

Figure 5-23 IP configuration



| Label | Description |
|-------------------|--|
| DHCP/BOOTP | Obtain the IP address automatically from DHCP server. |
| Static IP Address | Assigning an IP address manually. |
| Subnet Mask | Set the subnet mask to communicate on the network. |
| Gateway | Enter the IP address of the router in you network. |
| DNS Server | Enter the IP address of the DNS server to translate domain names into IP address. |
| Auto IP Report | The device server will report its status periodically. At DS-Tool->IP collection option show the device server status. The report interval is 0 indicate disable this setting (default). But you can set the other IP or Port. |
| Switch Mode | Redundant: When the connection between master-link and LAN fails, the DS can automatically switch to another LAN port within10mS, and still guarantees a non-stop connection Switch: Daisy Chain support to reduce usage of switch ports. |

Table 5-15 IP configuration

PPPoE setting

PPPoE (Point-to-Point Protocol over Ethernet), Device can use PPPoE mode to connect the Network. Input the "**username**" and "Password", then click "**Connect**" button. If the device has been connected, the "**Status**" will become the "**Link up**" and device will get an IP address from PPPoE server. Click "Return" button, return the "**IP Configuration**" default page.



| | dustrial Device | e Server |
|---|-----------------|------------------|
| open all 중 Serial Device Server System Time(SNTP) FIP Configuration | PPPoE Setting | |
| DDNS Configuration User Authentication | User Name | |
| ■ Port Serial Setting ■ Management | Password | |
| i Save/Reboot B Help | Status | Link down |
| | Connect | isconnect Return |

Figure 5-24 PPPoE setting.

DDNS Configuration

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



| | dustria | al Device Se | rver |
|---|---------|-----------------------|-----------------------------|
| open all | DDN | S Configuration | |
| DDNS Configuration User Authentication | | DDNS | ○ Enable ⊙ Disable |
| | | Service Provider | ezip |
| 😫 Save/Reboot 🗃 Help | | Host Name | |
| | | Account | |
| | | Password | |
| | | Check WAN IP Schedule | Every Hour 🕑 start at 0 : 0 |
| | | Apply | |

Figure 5-26 DDNS setting

| Label | Description | |
|----------------------|--|--|
| Service Provider | Choose the DDNS service Provider | |
| Hostname | You must first apply an account from the DDNS service Provider such as | |
| | www.dyndns.org, then register with the dynamic DNS service. Input the fixed hostname | |
| | you got from the DDNS service. | |
| Account and Password | Input the Account and Password you have registered from the DDNS service Provider. | |
| Check WAN IP | Device will check the IP address Status at interval time you set. | |
| Schedule | | |

Table 5-16 DDNS Setting



Authentication

You can set the password to prevent unauthorized access from network. Input the "Old password" and "New password" to change the password. Factory default is no password.

| | dustrial | Device S | erver | |
|--|----------|----------------------|-------|--|
| open all Serial Device Server System Time(SNTP) IP Configuration | User Au | uthentication | | |
| DDNS Configuration User Authentication | 0 |)ld Password | | |
| Port Serial Setting Management Save/Reboot | N | lew Password | | |
| E Help | с | Confirm New Password | | |
| | A | pply | | |

Figure 5-27Authentication



5.2.1.2 Port serial setting

| Serial | configu | ration |
|--------|---------|--------|
|--------|---------|--------|

| open all Serial Device Server System Port Serial Setting | al Device S | erver | |
|--|-------------------------|------------------------|--|
| Serial Configuration Port Profile Service Mode Management | | Port1 V | |
| i≊ Save/Reboot i≊ Help | Port Alias Interface | Port1 RS422 | |
| | Baud Rate | 38400 💌 | |
| | Data Bits | 8 🛩 | |
| | Stop Bits Parity | 1 V | |
| | Flow Control | None V | |
| | Force TX Interval Time | 0 ms | |
| | Performance | ⊙ Throughput ○ Latency | |
| | Apply | | |

Figure 5-28 Serial configuration

| Label | Description |
|------------|--|
| Port Alias | Remark the port to hint the connected device. |
| Interface | RS422 / RS485(2-wires) / RS485(4-wires) |
| Baud rate | 110bps/300bps/1200bps/2400bps/4800bps/9600bps/19200bps/ 38400bps/57600bps/115200bps/230400bps/460800bps |
| Data Bits | 5, 6, 7, 8 |
| Stop Bits | 1, 2 (1.5) |

The following table describes the labels in this screen.



| Parity | No, Even, Odd, Mark, Space |
|------------------------|---|
| Flow Control | No, XON/XOFF, RTS/CTS, DTR/DSR |
| Force TX Interval Time | Force TX interval time is to specify the timeout when no data has been transmitted. When the timeout is reached or TX buffer is full (4K Bytes), the queued data will be sent. 0 means disable. Factory default value is 0. |
| Performance | Throughput: This mode optimized for highest transmission speed. Latency: This mode optimized for shortest response time. |
| Apply | Activate settings on this page. |

Table 5-18 Serial configuration

Port Profile

| open all Serial Device Server System Port Serial Setting Serial Configuration | I Device S | erver | |
|---|-------------------------|-------------------------|--|
| Port Profile Service Mode | | Port1 V | |
| | Local TCP Port | 4000 | |
| 🗎 Help | Command Port | 4001 | |
| | Mode | Serial to Ethernet | |
| | Flush Data Buffer After | 0 ms | |
| | Delimiter(Hex 0~ff) | 1: 00 2: 00 3: 00 4: 00 | |
| | Mode | Ethernet to Serial | |
| | Flush Data Buffer After | 0 ms | |
| | Delimiter(Hex 0~ff) | 1: 00 2: 00 3: 00 4: 00 | |
| | Apply | | |
| | | | |
| | | | |
| | | | |
| | | | |

Figure 5-29 Port Profile



| Label | Description |
|--------------------|--|
| | Flush Data Buffer After: |
| | The received data will be queued in the buffer until all the delimiters are matched. |
| | When the buffer is full (4K Bytes) or after "flush S2E data buffer" timeout, the data will |
| | also be sent. You can set the time from 0 to 65535 seconds. |
| Serial to Ethernet | |
| | Delimiter: |
| | You can define max. 4 delimiters (00~FF, Hex) for each way. The data will be hold until |
| | the delimiters are received or the option "Flush Serial to Ethernet data buffer" times |
| | out. 0 means disable. Factory default is 0 |
| | Flush Data Buffer After: |
| | The received data will be queued in the buffer until all the delimiters are matched. |
| | When the buffer is full (4K Bytes) or after "flush E2S data buffer" timeout, the data will |
| | also be sent. You can set the time from 0 to 65535 seconds. |
| Ethernet to serial | |
| | Delimiter: |
| | You can define max. 4 delimiters (00~FF, Hex) for each way. The data will be hold until |
| | the delimiters are received or the option "Flush Ethernet to Serial data buffer" times |
| | out. 0 means disable. Factory default is 0 |

Table 5-18 Port Profile



Service Mode – Virtual COM Mode

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

| | dustria ⁼∣ c | | Server |
|---|-----------------|-----------------|---------------------------|
| open all Serial Device Server System Port Serial Setting Serial Configuration Serial Configuration | Serv | ice Mode | |
| Port ProfileService Mode | Porti | | |
| Management Save/Reboot | | Data Encryption | ○ Enable 		 ⊙ Disable |
| 🗎 Help | | Service Mode | Virtual COM Mode 💌 |
| | | Idle Timeout | 0 (0~65535)seconds |
| | | Alive Check | 420 (0~65535)seconds |
| | | Max Connection | 1 v max. connection (1~5) |
| | | Apply | |

Figure 5-30 Virtual COM mode

The following table describes the labels in this screen.

| Label | Description | | | |
|-----------------|---|--|--|--|
| Data Encryption | Use SSL to encrypt data. | | | |
| | When serial port stops data transmission for a defined period of time (Idle Timeout), the | | | |
| Idle Timeout | connection will be closed and the port will be freed and try to connect with other hosts. | | | |
| | 0 indicate disable this function. Factory default value is 0. If Multilink is configured, | | | |
| | only the first host connection is effective for this setting. | | | |



| Alive Check | The serial device will send TCP alive-check package in each defined time interval (Alive | | | | | |
|----------------|--|--|--|--|--|--|
| | Check) to remote host to check the TCP connection. If the TCP connection is not | | | | | |
| | alive, the connection will be closed and the port will be freed. 0 indicate disable this | | | | | |
| | function. Factory default is 0. | | | | | |
| Max Connection | The number of Max connection can support simultaneous connections are 5, default | | | | | |
| | values is 1. | | | | | |

Table 5-19 Virtual COM mode

*Not allowed to mapping Virtual COM from web

Service Mode – TCP Server Mode

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

| | dustria | al Device S | Server | |
|--|---------|--------------------|--------------------------|------------|
| open all Serial Device Server System Time(SNTP) P Onfiguration | Serv | ice Mode | www.oring-netw | orking.com |
| Wireless Configuration DDNS Configuration | | | Port1 | |
| User Authentication Ort Serial Setting | | Data Encryption | ◯ Enable ④ Disable | |
| Serial Configuration Port Profile | | Service Mode | TCP Server Mode 💌 | |
| Service Mode Management | | Telnet Negotiation | ◯ Enable ④ Disable | |
| Save/Reboot | | TCP Server Port | 4000 | |
| | | Idle Timeout | 0 (0~65535)seconds | |
| | | Alive Check | 40 (0~65535)seconds | |
| | | Max Connection | 1 v max. connection(1~5) | |
| | | Apply | | |

Figure 5-31 TCP Server Mode



| Label | Description |
|--------------------|---|
| Data Encryption | Use SSL to encrypt data. |
| Telnet Negotiation | Full Telnet command / symbol compatible |
| TCP Server Port | Set the port number for data transmission. |
| | When serial port stops data transmission for a defined period of time (Idle Timeout), the |
| Idle Timeout | connection will be closed and the port will be freed and try to connect with other hosts. |
| | 0 indicate disable this function. Factory default value is 0. If Multilink is configured, |
| | only the first host connection is effective for this setting. |
| | The serial device will send TCP alive-check package in each defined time interval (Alive |
| Alive Check | Check) to remote host to check the TCP connection. If the TCP connection is not |
| Alive Check | alive, the connection will be closed and the port will be freed. 0 indicate disable this |
| | function. Factory default is 0. |
| May Connection | The number of Max connection can support simultaneous connections are 5, default |
| Max Connection | values is 1. |

Table 5-20 TCP server mode

Service Mode – TCP Client Mode

In TCP Client Mode, device can establish a TCP connection with server by the method you set (Startup or any character). After the data has been transferred, device can disconnect automatically from the server by using the TCP alive check time or Idle timeout settings.



| | dustria | al Device S | Server | |
|--|---------|------------------|-------------------------|--|
| open all B Serial Device Server ● System ● Not Serial Setting B Serial Configuration | Serv | ice Mode | | |
| Port Profile Service Mode | | | Port1 💌 | |
| Management Save/Reboot | | Data Encryption | ◯ Enable | |
| 🗎 Help | | Service Mode | TCP Client Mode 💌 | |
| | | Destination Host | : 4000 | |
| | | Idle Timeout | 0 (0~65535)seconds | |
| | | Alive Check | 420 (0~65535)seconds | |
| | | Connect on | ⊙Startup ○Any Character | |
| | | Connect Mode | O Manual Connect Close | |
| | | Destination Host | Port | |
| | | 1. | 65535 | |
| | | 2. | 65535 | |
| | | з. | 65535 | |
| | | 4. | 65535 | |
| | | Apply | | |

Figure 5-32 TCP client mode

| Label | Description |
|------------------|--|
| Data Encryption | Use SSL to encrypt data. |
| Destination Host | Set the IP address of host and the port number of data port. |
| Idle Timeout | When serial port stops data transmission for a defined period of time (Idle Timeout), the connection will be closed and the port will be freed and try to connect with other hosts. 0 indicate disable this function. Factory default value is 0. If Multilink is configured, only the first host connection is effective for this setting. |
| Alive Check | The serial device will send TCP alive-check package in each defined time interval (Alive Check) to remote host to check the TCP connection. If the TCP connection is not alive, the connection will be closed and the port will be freed. 0 indicate disable this function. Factory default is 0. |



| Connect on Startup | The TCP Client will build TCP connection once the connected serial device is started. |
|--------------------|---|
| Connect on Any | The TCP Client will build TCP connection once the connected serial device starts to |
| Character | send data. |

Table 5-21 TCP client mode

Service Mode – UDP Client Mode

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

| open all Serial Device Server . System . Of Serial Setting | al Device S | Server | | |
|---|-----------------------------|-----------------------|-----------|--|
| Serial Configuration Port Profile Service Mode Management Save/Reboot Help | Service Mode Listen Port | Port1 UDP Mode 4000 | | |
| | Host start IP | Host end IP | Send Port | |
| | 1. 0.0.0.0 | 0.0.0.0 | 65535 | |
| | 2. 0.0.0.0 | 0.0.0.0 | 65535 | |
| | 3. 0.0.0.0 | 0.0.0.0 | 65535 | |
| | 4. 0.0.0.0 | 0.0.0.0 | 65535 | |
| | Apply | | | |

Figure 5-33 UDP client mode



5.2.1.3 Management

Access IP Control

Access IP Control Settings allow you to add or block the remote host IP addresses to prevent unauthorized access. If host's IP address is in the accessible IP table, then the host will be allowed to access the DS. You can choose one of the following cases by setting the parameter.

- Only one host with a special IP address can access the device server, "IP address /255.255.255.255" (e.g., "192.168.0.1/255.255.255.255").
- Hosts on a specific subnet can access the device server. "IP address/255.255.255.0" (e.g., "192.168.0.2/255.255.255.0")
- 3. Any host can access the device server. Disable this function by un-checking the "Enable IP Filter" checkbox



| ven all ⊠ Serial Device Server _ System _ Port Serial Setting | ss IP Cor | evice So | erver | | |
|--|-----------|---------------------|---------------------|----------------|---------------------------|
| Management Access IP Control | 🔲 Enabli | e IP Filtering (Not | check this option w | rill allow any | IP to have assessibility) |
| SMTP/SNMP Conf. System Event Conf. | No. | Activate the IP | IP Address | | Netmask |
| 🖺 Save/Reboot 🗎 Help | 1 | | | | |
| | 2 | | | | |
| | 3 | | | | |
| | 4 | | | | |
| | 5 | | | | |
| | 6 | | | | |
| | 7 | | | | |
| | 8 | | | | |
| | 9 | | | | |
| | 10 | | | | |
| | 11 | | | | |
| | 12 | | | | |
| | 13 | | | | |
| | | | | | |
| | 14 | | | | |
| | 15 | _ | | | |
| | 16 | | | | |

Figure 5-34 Access IP



SMTP/SNMP Conf

Email Server configuration includes the mail server's IP address or domain. If the authentication is required, specify your name and password. There are 4 Email addresses that you can specify to receive the notification.

SNMP Server configuration includes the SNMP Trap Server IP address, Community, Location and Contact. There are 4 SNMP addresses you can specify to receive the notification.

SysLog server configuration includes the server IP and server Port. This option need to use with DS-Tool.

| | dustrial De | vice Serv | er | |
|---|-------------|--------------------------|------|--|
| open all Serial Device Server System Port Serial Setting | SMTP/SNMP (| Configuration | | |
| Management Access IP Control | E-mail Se | ttings | | |
| SMTP/SNMP Conf. | SMTP Se | rver | Port | |
| 📓 Save/Reboot 🖺 Help | 🗌 My se | rver requires authentica | tion | |
| | User Nam | 18 | | |
| | Password | I | | |
| | E-mail Se | ender | | |
| | E-mail Ac | idress 1 | | |
| | E-mail Ac | Idress 2 | | |
| | E-mail Ac | ldress 3 | | |
| | E-mail Ac | | | |
| | SNMP Tra | p Server | | |
| | SNMP Se | rver 1 | | |
| | SNMP Se | rver 2 | | |
| | SNMP Se | rver 3 | | |
| | SNMP Se | rver 4 | | |
| | Communi | ty | | |

Figure 5-35 SMTP / SNMP conf



System Event Conf

Specify the events that should be notified to the administrator. The events can be alarmed by E-mail, SNMP trap, or system log.

| ORing In | dustria | al Device | e Ser | ver | | | |
|--|---------|--|------------|-----------------|-------------|-----------------|--|
| open all | | Device Event Notifi | cation | | | | |
| Serial Device Server System | | Hardware Reset (C | old Start) | 🔲 SMTP Mail | 🔲 SNMP Trap | Syslog | |
| Port Serial Setting Management | | Software Reset (W | arm Start) | 🔲 SMTP Mail | 🔲 SNMP Trap | Syslog | |
| Access IP Control | | Login Failed | | 🔲 SMTP Mail | 🔲 SNMP Trap | Syslog | |
| 🖺 System Event Conf. | | IP Address Change | d | 🔲 SMTP Mail | 🔲 SNMP Trap | Syslog | |
| 📰 Save/Reboot 🗎 Help | | Password Changed | | 🔲 SMTP Mail | 🔲 SNMP Trap | 🔲 Syslog | |
| | | Access IP Blocked | | 🔲 SMTP Mail | 🔲 SNMP Trap | 🔲 Syslog | |
| | | Redundant Power (| Changed | 🔲 SMTP Mail | 🔲 SNMP Trap | 🔲 Syslog | |
| | | Redundant Etherne | t Changed | 🔲 SMTP Mail | 🔲 SNMP Trap | Syslog | |
| | | Port Event Notifica | tion | Port1 🖌 | ▼ | | |
| | | DCD Changed | | 🔲 SMTP Mail | 🔲 SNMP Trap | Syslog | |
| | | DSR Changed | | 🔲 SMTP Mail | 🔲 SNMP Trap | Syslog | |
| | | RI Changed | | 🔲 SMTP Mail | 🔲 SNMP Trap | 🔲 Syslog | |
| | | CTS Changed | | 🔲 SMTP Mail | 🔲 SNMP Trap | 🔲 Syslog | |
| | | Port Connected | | 🔲 SMTP Mail | 🔲 SNMP Trap | 🔲 Syslog | |
| | | Port Disconnected | | 🔲 SMTP Mail | 🔲 SNMP Trap | 🔲 Syslog | |
| | | Fault Event Notification and Fault LED/Relay | | | | | |
| | | Power 1 Fault | SMTP M | ail 🔲 SNMP Trap | Syslog | Fault LED/Relay | |
| | | Power 2 Fault | SMTP M | ail 🔲 SNMP Trap | Syslog | Fault LED/Relay | |
| | | Eth1 Link Down | SMTP M | ail 🔲 SNMP Trap | Syslog | Fault LED/Relay | |
| | | Eth2 Link Down | SMTP M | ail 🔲 SNMP Trap | Syslog | Fault LED/Relay | |
| | | Apply | | | | | |

Figure 5-36 SMTP / SNMP conf

The following table describes the labels in this screen.

| Label | Description | |
|----------------------|--|------|
| Hardware Reset (Cold | This refers to starting the system from power off (contrast this with warm start). | When |



| Start) | performing a cold start, DS will automatically issue an Auto warning message by | |
|----------------------|---|--|
| | sending E-mail, log information or an SNMP trap after booting. | |
| Software Reset (Warm | This refers to restart the computer without turning the power off. When performing a | |
| , , | warm start, DS will automatically send an E-mail, log information or SNMP trap after | |
| Start) | reboot. | |
| Login Foiled | When an unauthorized access from the Console or Web interface, a notification will be | |
| Login Failed | sent. | |
| IP Address Changed | When IP address of device changed, a notification will be sent. | |
| Password Changed | When password of device changed, a notification will be sent. | |
| Access IP Blocked | When the host accesses the device with blocked IP addresses, a notification will be | |
| | sent. | |
| Redundant Power | When status of power changed, a notification will be sent. | |
| Change | | |
| Redundant Ethernet | When status of Ethernet port changed, a notification will be sent. | |
| Change | | |
| DCD changed | When DCD (Data Carrier Detect) signal changes, it indicates that the modem | |
| | connection status has been changed. A Notification will be sent. | |
| DSR changed | When DSR (Data Set Ready) signal changes, it indicates that the data communication | |
| | equipment is powered off. A Notification will be sent. | |
| RI changed | When RI (Ring Indicator) signal changes, it indicates an incoming call. Notificat | |
| | be sent. | |
| CTS changed | When CTS (Clear To Send) signal changes, it indicates that the transmission between | |
| | computer and DCE can proceed. A notification will be sent. | |
| Port connected | In TCP Server Mode, when the device accepts an incoming TCP connection, this event | |
| | will be trigger. In TCP Client Mode, when the device has connected to the remote host, | |
| | this event will be trigger. In Virtual COM Mode, Virtual COM is ready to use. A | |
| | notification will be sent. | |
| Port disconnected | In TCP Server/Client Mode, when the device lost the TCP link, this event will be trigger. | |
| | In Virtual COM Mode, When Virtual COM is not available, this event will be trigger. A | |
| | notification will be sent. | |
| Power 1 Fault | When Power 1 Fault, a notification will be sent and the Fault LED will be turned on. | |
| Power 2 Fault | When Power 2 Fault, a notification will be sent and Fault LED will be turned on. | |
| | | |



| Eth1 link down | When Eth1 link down, a notification will be sent and Fault LED will be turned on. |
|----------------|---|
| Eth2 link down | When Eth2 link down, a notification will be sent and Fault LED will be turned on. |

Table 5-22 System event conf

5.2.1.4 Save/Reboot

| | dustrial Device Server |
|--|---|
| open all Serial Device Server System Or Port Serial Setting Management Access IP Control | Factory Default Reset to default configuration. Click Reset button to reset all configurations to the default value. |
| SMTP/SNMP Conf. System Event Conf. Save/Reboot Help | Reset Restore Configuration You can restore the previous saved configuration to Device Server. |
| | File to restore:)(浏览 Restore |
| | Backup Configuration You can save current EEPROM value from the Device Server as a backup file of configuration. Backup |
| | Upgrade Firmware Specify the firmware image to upgrade. |
| | Note: Please DO NOT power off this device while upgrading firmware. Firmware: |
| | Reboot Device Please click [Reboot] button to restart device. |

Figure 5-37 Save / Reboot



| Label | Description | |
|------------------|--|--|
| Factory Default | Load default configuration except settings of Network. If you want load all factory default, | |
| Factory Default | you should press "Reset" button about the five seconds on the device (Hardware restore). | |
| Restore | | |
| Configuration | Restore the previous exported configuration. | |
| Backup | Export the current configuration to a file. | |
| Configuration | | |
| Upgrade Firmware | Upgrade to a new firmware with specified file. | |
| Reboot Device | Reboot the device server (warm start). | |

Table 5-23 Save / Reboot

5.3 Configuration by SSH Console

5.3.1 Connect to DS

You can use SSH Tool (e.g., PUTTY) to access SSH console of DS. The SSH console interface is

shown below.

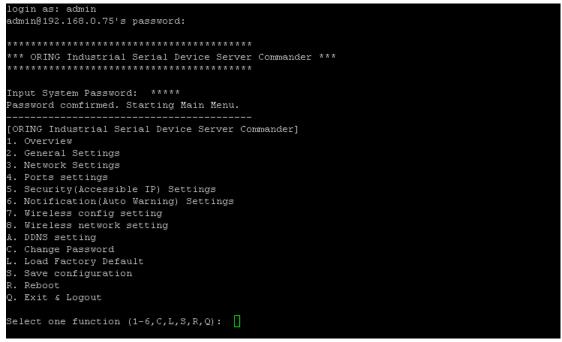


Figure 5-38 SSH





Technical Specifications

| Network Interface | | | |
|-------------------------|--|--|--|
| Ethernet | 2x 10/100Base-T(X) which support Redundant Dual Ethernet or | | |
| Ethernet | Switch Mode support. Auto-recover less than 10ms | | |
| connector | RJ-45 | | |
| Protection | Built-in1.5KV magnetic isolation | | |
| | ICMP, IP, TCP, UDP, DHCP, BOOTP, ARP/RARP, DNS, SNMP | | |
| Protocols | MIB II, HTTPS, SSH | | |
| Serial Interface | | | |
| | IDS-5042/IDS-5042+: | | |
| | 4x RS232 / RS422 / 4(2)-Wire RS485. Which can be configured by | | |
| | DS-Tool | | |
| Interface | IDS-5042-I+: | | |
| | 4x RS422 / 4(2)-Wire RS485. Which can be | | |
| | configured by DS-Tool | | |
| Connector | IDS-5042/IDS-5042+: Male DB9 | | |
| Connector | IDS-5042-I+: 5 pin terminal block | | |
| Serial Baud Rate | 110 bps to 460.8 Kbps | | |
| Data Bits | 5, 6, 7, 8 | | |
| Parity | odd, even, none, mark, space | | |
| Stop Bits | 1. 1.5, 2 | | |
| | TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND | | |
| RS-232 signals | (IDS-5042/IDS-5042+) | | |
| RS-422 signals | Tx+,Tx-, Rx+, Rx-,GND | | |
| RS-485 (4 wire) signals | Tx+,Tx-, Rx+, Rx-,GND | | |
| RS-485 (2 wire) signals | Data+, Data-,GND | | |



| Flow control | XON/XOFF, RTS/CTS, DTR/DSR | | |
|-----------------------------|---|--|--|
| Serial Line Protection | Built-in15KV ESD protection | | |
| | 2KV DC isolation for each port (IDS-5042-I+ only) | | |
| | PWR P.O.E.(1)(2) / Ready: | | |
| | 1) Red On: Power is on and booting up. | | |
| | Red Blinking: Indicates an IP conflict, or DHCP or BOOTP server | | |
| | did not respond properly. | | |
| | 2) Green On: Power is on and functioning normally. | | |
| | Green Blinking: Located by Administrator. | | |
| LED Indicators | ETH1(2) Link / ACT: | | |
| | Amber ON/Blinking: 10 Mbps Ethernet | | |
| | Green ON/Blinking:100 Mbps Ethernet | | |
| | Serial TX / RX LEDS: | | |
| | Red: Serial port is receiving data | | |
| | Green: Serial port is transmitting data. | | |
| | Fault: Fault alarm (Red) | | |
| Power Requirements | | | |
| Power Input | PWR1/2: 12~48VDC in 6-pin Terminal Block | | |
| Reverse Polarity Protection | Present at terminal block | | |
| Power Consumption | 7 Watts MAX | | |
| Software Utility | | | |
| | DS-Tool for Windows NT/2000/XP/ 2003/VISTA which include | | |
| | Device discovery | | |
| | Auto IP report | | |
| | Device setting (run-time change, no rebooting) | | |
| Utility | Access control list | | |
| | Group setting | | |
| | Device monitoring | | |
| | Serial port monitoring | | |
| | Log info | | |
| | | | |



| | Virtual Com / TCP Server / TCP Client / UDP /Serial Tunnel | | |
|-----------------------|--|--|--|
| | TCP Alive Check Timeout | | |
| Serial Mode | Inactivity Timeout | | |
| | Delimiter for Data Packing | | |
| | Force TX Timeout for Data Packing | | |
| Multiple Link | 5 Hosts simultaneous connection: Virtual Com / | | |
| | TCP server / TCP Client / UDP | | |
| VCOM Driver | Windows NT/2000/XP/2003/VISTA | | |
| Configuration | Web HTTPS console, SSH console, DS-Tool for Windows | | |
| Configuration | NT/2000/XP/VISTA | | |
| Environmental | | | |
| Operating Temperature | -10 to 60°C (14 to 140°F) | | |
| Operating Humidity | 5% to 95% (Non-condensing) | | |
| Storage Temperature | -40 to 85°C (-40 to 185°F) | | |
| Mechanical | | | |
| Dimensions(W x D x H) | 52mm(W)x106mm(D)x144mm(H) | | |
| Casing | IP-30 protection | | |
| Regulatory Approvals | | | |
| Shock | IEC 60068-2-27 | | |
| Free Fall | IEC 60068-2-32 | | |
| Vibration | IEC 60068-2-6 | | |
| EMI | FCC Part 15, CISPR (EN55022) class A | | |
| | EN61000-4-2 (ESD), EN61000-4-3 (RS), | | |
| EMS | EN61000-4-4 (EFT), EN61000-4-5 (Surge), | | |
| | EN61000-4-6 (CS). | | |
| Warranty | 5 years | | |