

SUNIX Co., Ltd. TEL : +886-2-8913-1987 Email : info@sunix-ncci.com.tw

USER'S MANUAL

Industrial Device Server IDS-3012 Wire Series

Ver. 1.0, Jan. 2008

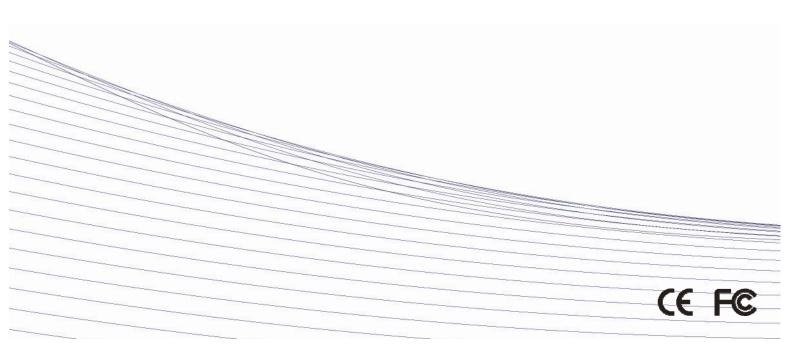




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Getting to Know Your Device Server

1.1 About the IDS-3012 Serial Device Server

IDS-3012 is an innovative 1 port RS232/422/485 to 2 ports LAN redundant device server. To assure the agility and security of critical data, IDS-3012 offers many powerful features for HW & SW redundant functions. When the connection between master-link and LAN fails, the IDS-3012 can automatically switch to another LAN port within 10mS, and still guarantees a non-stop connection. IDS-3012 also supports switch mode, you can use Daisy Chain to reduce the usage of Ethernet switch ports. Secondly, the IDS-3012 can simultaneously transfer data into 5 host PCs. This feature can assure all critical data that saved in different host PC to avoid Ethernet break or host PCs failure. Thirdly, the IDS-3012 also provides dual redundant power inputs on DC power jack and terminal block. IDS-3012 also provides NAT pass through function so that you are able to manage IDS-3012 inside or outside the NAT router. It is easy for different IP domain to use IDS-3012. You can configure and mange the device server easily by using the windows management tool (IDS-Tools). Therefore, IDS-3012 is the best communication redundant solution for current application of serial devices.



1.2 Software Features

- Redundant Dual Ethernet Ports: Recovery time < 10mS</p>
- Switch Mode Supported: Daisy Chain support to reduce usage of switch ports
- Secured Management by HTTPS and SSH
- Event Warning by Syslog, Email, SNMP Trap, and Beeper
- NAT-pass through: Manage through NAT router
- Redundant multiple host devices: 5 simultaneous in Virtual COM, TCP Server, TCP Client mode, UDP
- Secured Management by HTTPS and SSH
- Versatile 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: -20 to 85°C
- Operating Humidity: 5% to 95%, non-condensing
- Casing: IP-30
- 2 10/100Base-T(X) Ethernet port
- Dimensions(W x D x H) : 72mm(W)x125 mm(D)x31mm(H)





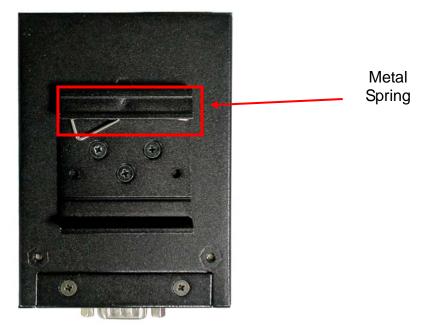
Hardware Installation

2.1 Install IDS-3012 on DIN-Rail

Each IDS-3012 has a Din-Rail kit on rear panel. The Din-Rail kit helps IDS-3012 to fix on the Din-Rail. It is easy to install the IDS-3012 on the Din-Rail:

2.1.1 MOUNT IDS-3012 ON DIN-RAIL

Step 1: Slant the IDS-3012 and mount the metal spring to Din-Rail.



Step 2: Push the IDS-3012 toward the Din-Rail until you heard a "click" sound.



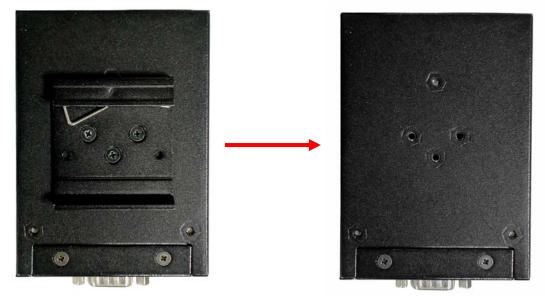


2.2 Wall Mounting Installation

Each IDS-3012 has another installation method. A wall mount panel can be found in the package. The following steps show how to mount the IDS-3012 on the wall:

2.2.1 MOUNT IDS-3012 ON WALL

Step 1: Remove Din-Rail kit.



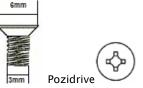
Step 2: Use 3 screws that can be found in the package to combine the wall mount panel. Just like the picture shows below:

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The screws specification shows in the following two pictures. In order to prevent IDS-3012 from any damage, the size of screws should not be larger than the size that used in IDS-3012.



Step 3: Mount the combined IDS-3012 on the wall.





Hardware Overview

3.1 Front Panel



- LED for PWR1 and system status. When the PWR1 links, the green led will be light on.
 LED for PWR2 and system status. When the PWR2 links, the green led will be light on.
- 3. LED of 10/100Base-T(X) Ethernet port 1.
- 4. LED of 10/100Base-T(X) Ethernet port 2.
- 5. LED of serial port. Green for transmitting, red for receiving.
- 6. Product description

3.2 Front Panel LEDs

The following table describes the labels that stick on the IDS-3012.

LED		Color	Status	Description
			On	DC power 1 activated.
PWR1				Indicates an IP conflict, or DHCP or
	R1	Green/Red	Red blinking	BOOTP server did not respond
				properly

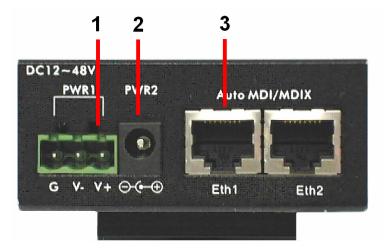


		On	DC power 2 activated.
	Green/Red		Indicates an IP conflict, or DHCP or
PWR2	Green/Red	Red blinking	BOOTP server did not respond
			properly
	Green/Amber	Green On/Blinking	100Mbps LNK/ACT
ETH1	dreen/Amber	Amber On/Blinking	10Mbps LNK/ACT
ETH2	Green/Amber	Green On/Blinking	100Mbps LNK/ACT
	Green/Amber	Amber On/Blinking	10Mbps LNK/ACT
TX/RX	Green	Blinking	Serial port is transmitting data
1 / 1 /	Red	Blinking	Serial port is receiving data

3.3 Top Panel

The Top panel components of IDS-3012 are showed as below:

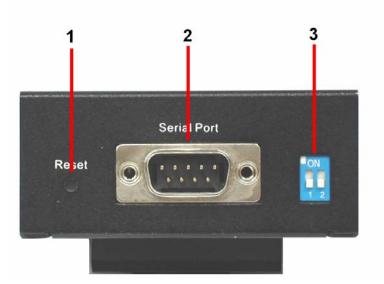
- 1. Terminal block include: PWR1 (12 ~ 48V DC)
- 2. Power Jack include: PWR2 (12 ~ 48V DC)
- 3. RJ45 Ethernet Connector: 2 10/100Base-T(X) Ethernet interface.



3.4 Bottom Panel

IDS-3012 / IDS-3011 ~

The bottom panel components of IDS are showed as below:



- 1. Reset bottom. 5 seconds for factory default.
- 2. Male DB9 connector: Serial interface of RS-232/422/485 (2 wire)(4 wire).



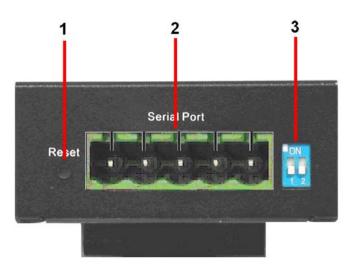
Pin Assignment

Pin#	RS232	RS422	RS485(4 wire)	RS485(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				
RS23	32 mode	act as E	DTE		

3. DIP Switch: Termination for RS-422/485

DIP1	DIP2	Termination Configuration
ON	ON	Termination for Long Distance 4-wire RS485/RS422
ON	OFF	Reserved
OFF	ON	Termination for Long Distance 2-wire RS485
OFF	OFF	No Termination for RS232/422/485(short distance)

IDS-2011 ~ The bottom panel components of IDS are showed as below:



- 1.
- Reset bottom. 5 seconds for factory default. 5-pin Terminal Block connector: Serial interface of RS-422/485 (2 wire)(4 wire). 2.



Pin Assignment



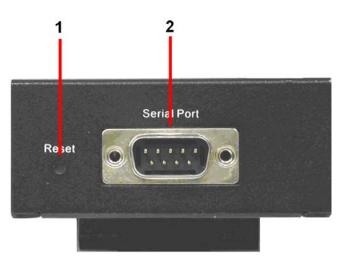
Pin#	RS422	RS485(4 wire)	RS485(2 wire)
1	RXD-	RXD-	
2	RXD+	RXD+	
3	TXD+	TXD+	DATA+
4	TXD-	TXD-	DATA-
5	GND	GND	GND

3. DIP Switch: Termination for RS-422/485

DIP1	DIP2	Termination Configuration
ON	ON	Termination for Long Distance 4-wire RS485/RS422
ON	OFF	Reserved
OFF	ON	Termination for Long Distance 2-wire RS485
OFF	OFF	No Termination for RS232/422/485(short distance)

IDS-1011 ~

The bottom panel components of IDS are showed as below:



- 1. Reset bottom. 5 seconds for factory default.
- 2. Male DB9 connector: Serial interface of RS-232.

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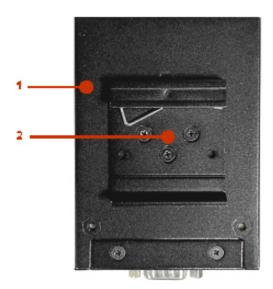
Pin Assignment

Pin#	RS232	RS422	RS485(4 wire)	RS485(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				
RS23	32 mode	act as D	DTE		

3.5 Rear Panel

The rear panel components of IDS-3012 are showed as below:
 Screw holes for wall mount kit and DIN-Rail kit.
 Din-Rail kit

- 1. 2. 3.
- Wall Mount Kit









Cables

4.1 Ethernet Cables

The IDS-3012 has standard Ethernet ports. According to the link type, the IDS-3012 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 Types and 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

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.

RJ-45 Pin Assignments

Pin Number	Assignment
1	TD+
2	TD-
3	RD+
4	Not used
5	Not used
6	RD-
7	Not used
8	Not used

The IDS-3012 supports auto MDI/MDI-X operation. You can use a straight- through cable to connect PC to IDS-3012. The following table below shows the 10BASE-T/ 100BASE-TX MDI and MDI-X port pin outs.

MDI/MDI-X pins assignment

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

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





Management Interface

5.1 IDS-Tools

IDS-Tools is a powerful Windows utility for IDS 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-TOOLS

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

😼 Installing IDS-Tools			×
SUNIX	Destination Directory C:\Program Files\IDS-Tools		
67	, Required: 5513 K Available: 6323792 K	Browse	
		Start <u>E</u> xit	

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

🛃 Installing IDS-Tools 🛛 🛛
Installation was completed successfully
100%
(OK)

Step 3: Check for your selection.



5.1.2 USING IDS-TOOLS

5.1.2.1 Explore IDS device servers

IDS-Tools will broadcast to the network and search all available IDS devices in the network. The default IP address of device is "**192.168.1.1**", 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.

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Sroadcast		ng			e Firmware
∃ IP Co Setu Setu Syste		25:44:56:56:45,Im	valid IP,*	Original IP 19 Using Static Assign Static IF IP Address 1 Netmask 2 Gatway 1 DNS1 DNS2	
	Cancel	Clear All	Select All	Add]

5.1.2.2 Configure IDS device servers

General settings

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

 General
 Security
 Networking
 Notification
 Management
 Upgrade Firmware
 Save/Load

	C Address	Version	
00:25:	44:56:56:45	1.1f	
			🕙 Locate On
	Auto IP Report		
Port	IP Address	Port	
123	192.168.0.2	60001	
	Get Cu	irrent Host	
<u> </u>	Report Interval	_	
	0	Seconds	
		Port IP Address 123 192.168.0.2 Get Cu Report Interval	Port IP Address Port 123 IP2.168.0.2 60001 Get Current Host Report Interval



Label	Description				
Device	You can set the device name or related information. By clicking "Locate On"				
Name/location	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.				

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.

Security

⊡~	General Security Networking Notification Management Upgrad	le Firmware Save/Load
	Access IP Table	Password
i⊟ ● 192.168.0.27	IP1 192.168.0.1 Mask 255.255.255 🔽 Enabled	New Password
VCOM List	IP2 192.168.0.2 Mask 255.255.255.0 ▼ Enabled	I
	IP3 Mask 0.0.0.0 Enabled	Confirm New Password
🚽 🧃 System Log	IP4 Mask 0.0.0 Enabled	Old Password
	IP5 Mask 0.0.0.0 Enabled	
	IP6 Mask 0.0.0.0 Enabled	
	IP7 Mask 0.0.0.0 Enabled	Change Password
	IP8 Mask 0.0.0.0 Enabled	
	IP9 Mask 0.0.0.0 Enabled	
	IP10 Mask 0.0.0.0 Enabled	
	IP11 Mask 0.0.0.0 Enabled	
	IP12 Mask 0.0.0.0 Enabled	
	IP13 Mask 0.0.0.0 Enabled	
	IP14 Mask 0.0.0.0 Enabled	
	IP15 Mask 0.0.0.0 Enabled	
	IP16 Mask 0.0.0.0 Enabled	
	S Refresh	🚴 Apply Only 🛛 🇼 Apply and Save

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 default is "admin".

Network Setting						
⊡ 🛋 DSTool		General Securi	ty Networking Notification	Management U	pgrade Firmware Save/L	oad
⊡ — ⊜ Device List ⊡ – ⇔ 192.16 9 por	3.0.27	Wire Using Static	: IP 🦵 Using DHCP/BOOT	ſP		
- 🖧 VCOM List ⊡ 💥 Setup Wiza	rd	Static IP Setting	gs			
IP Collectio	n	IP Address	192.168.0.27			
		Netmask	255.255.255.0			
		Gatway	192.168.0.1			
		DNS1	61.177.7.1			
		DNS2	168.95.192.1			
		🍤 Refresh			👌 Apply Only	Apply and Save
The following table de	scribes the la	bels in thi	s screen.			
Label	Description					
Using DHCP/BOOTP	IP Address a	automatica	ally assigned by a	DHCP serve	r in your networ	[.] k.
Static IP Address	Manually as	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 IP address.

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 Notification Management Upgrade Firmware Save/Load
SNMP Trap Email Notification 🔽 Syslog Notification
Syslog Setttings
Notified Items Hardware Reset (Cold Start) Redundant Power Changed Software Reset (Warm Start) Redundant Ethernet Changed Login Failed D1_1 Changed IP Changed D1_2 Changed Password Changed D1_3 Changed Access IP Blocked D1_4 Changed
System Log Settings Server IP 192.168.0.2 514 Using Current Host's Log Server
192.168.0.2 514 Using Current Host's Log Server
🍤 Refresh 🛛 🕹 Apply Only 🌏 Apply and Save

Label Description		
SNMP TrapTo notify events by SNMP trap.		
Email NotificationTo 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.	



	anagement eneral Security	Networking Notif	ication	Management	Upgrade H	Irmware
	🔽 Web Management Enable		Go	to Web Manage	ment	
	🔽 Telnet Management Enable		Goto Telnet Management			
	🔽 SNMP Mana	agement Enable				
Г	SNMP Manager	ment Settings				7
	Community					
	Location					
	Contact					
	Trap Server1					
	Trap Server2					
	Trap Server3					
	Trap Server4					

The following table describes the labels in this screen.

Label	Description
Web Management	To enable management from Web. Click "Goto Web Management" button to
Enable	access web.
Telnet Management	To enable management by Telnet. Click "Goto Telnet Management" button to
Enable	execute Telnet command.
SNMP Management Enable	To enable management by SNMP.
SNMP Management Settings	To configure SNMP related settings.

Upgrade Firmware

General	Security	Networking	Notification	Management	Upgrade Firmware	Save/Load	
Firmwa	are Image						
					Browsing	Upgrade	L

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



Save/Load ieneral Security Networking Notification Management Upgrade Firmware Save/Load
Save Configuration to Flash
Load Default
o Load Default
Reboot Device
Reboot Device
Import/Export Configuration
Import Export

The following table describes the labels in this screen.

Label	Description
Save Configuration to Flash	Save current configuration into flash memory.
Load Default	Load default configuration except the network settings. If you want to load all factory 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	Export current configuration to a file to backup the configuration.

5.1.2.3 Configure serial port

Serial Setti	ngs Service Mode	Notification			
port1					
Port Alias	Port0			_	
Baudrate Parity	38400 No	Stop Bits	1 Vo Flow	Performance	Throughput 👤
Data Bits	8	 Interface 	RS232 💌		
Delimiter Settings Serial to Ethernet Ethernet to Serial Delimiter 1 Delimiter 2 0 (HEX) 0 (HEX) Enabled Enabled Flush Serial to Ethernet Data Buffer After 0 (0-65535) ms The received data will be queueing in the buffer until all the delimiters are					
matched		full (4K Bytes) or aft	er "flush S2E data buffer"		
0 The rece		5535 (ms sueing in TX buffer	interval time data 2 inte until TX interval time is tim disable.		
🍤 Refre	esh		~	Apply Only	Apply and Save
The foll	owing table desc	ribes the labels	s in this screen.		
Label	~	Description			

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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/
Buuu fute	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
Performance	Throughput: This mode optimized for highest transmission speed.
	Latency: This mode optimized for shortest response time.
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 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.
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.
	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.
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.
Load Default	Remark the port to hint the connected device.

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

Port1 Service Mode Virtual COM Mode			
Virtual COM Mode			
Virtual COM Settings Misc. Data Port# 4004 Edit IP Port Number Control Port# 4005 Alive Check	(0-65535) Seconds (0-65535) Seconds		
Multilink			
Max Connections	Select a Virtual COM Name		
5 💌	VCOM1		
Destination Host VCOM Name	(Validated charaters of virtual COM name is A-Z, a-z and 0-9. Max Length of the name is 128 charaters)		
Waiting for VCOM connect 🔤 Goto VCom	Using Traditional COM Name		
Waiting for VCOM connect Goto VCom	COM3 COM4 COM5 COM6		
Waiting for VCOM connect 🔄 Goto VCom	COM7 COM8 COM8		
4 Waiting for VCOM connect Soto VCom	COM10 COM11 COM12		
Waiting for VCOM connect Goto VCom			
	Cancel OK		

The following table describes the labels in this screen.

Label Description



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.

*Not allowed to mapping Virtual COM from web

Service Mode - TCP Server Mode

In TCP Server Mode, IDS is configured with a unique Port combination on a TCP/IP network. In this case, IDS 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.

erial Settings Service Mode Notification			
service Mode TCP Server Mode 💌			
CP Server Mode			
	e Timeout 0 (0-65535) Seconds		
Control Port 4003	ve Check 0 (0-65535) Seconds		
Multilink			
Max Connections			
1 S Refresh			
Destination Host			
4 Disconnect			
5			
🍫 Refresh	🌛 Apply Only 🛛 🌛 Apply and Save		

The following table describes the labels in this screen.

Label	Description
Data Port	Set the port number for data transmission.
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.
Max Connection	The number of Max connection can support simultaneous connections are 5, default values is 1.

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 Destination Host Port 192.168.0.10 4002 ✓ Enable Control Port 4003	Misc. Idle Timeout 0 (0-65535) Seconds Alive Check 0 (0-65535) Seconds Connect on Startup
Multilink	
Destination Host Port	
Auto Scar	n
2 Auto Scar	n
Auto Scar	n
4 Auto Scar	n

Label	Description
Destination Host	Set the IP address of host.
Port	Set 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 Character	The TCP Client will build TCP connection once the connected serial device starts to send data.



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

Serial Settings Service Mode Notification	
port1	
Service Mode UDP Mode	
UDP Mode	
UDP Settings	
Listening Port	
4004 eQ. Auto Scan	
Multilink	
Destination Host Begin Destination Host End Sending Port	
1 192.168.0.1 to 192.168.0.100 10000 Auto Scan	
to Auto Scan	
3	
to Auto Scan	
4	
to Auto Scan	
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 Notification	
🔽 SNMP Trap 🖉 Email Notification 🔽 Syslog Notification	
SNMP Settings Email Settings Syslog Settings	
Notified Items	
T DCD Changed T CTS Changed	

Notified items CTS Changed DSR Changed Port Connected RI Changed Port Disconnected Email to Mail Server: Mail to: Server: Wail to: Server: Mail to: Server:

Label	Description	
DCD changed	When DCD (Data Carrier Detect) signal changes, it indicates that the modem	
	connection status has changed. 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 that the incoming of a call. A Notification will 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.

5.2 Configuration by Web Browser

5.2.1 CONNECT TO THE WEB PAGE

Step 1: Input the IP address of IDS with "https://192.168.1.1" in the Address input box of IE.

Securit	y Alert 🛛 🗙	
£	Information you exchange with this site cannot be viewed or changed by others. However, there is a problem with the site's security certificate.	
	The security certificate was issued by a company you have not chosen to trust. View the certificate to determine whether you want to trust the certifying authority.	
	The security certificate date is valid.	
	The name on the security certificate is invalid or does not match the name of the site	
	Do you want to proceed?	
	Yes No Yiew Certificate	

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

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

*Only if password is set.

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



TEL : +886-2-8913-1987 Email : info@sunix-ncci.com.tw

🥖 Industrial Serial Device Server - Windows Ir	nternet Explorer	
🚱 🕤 👻 https://192.168.1.1/		Certificate Error 😽 🗙 Google
<u>File E</u> dit <u>V</u> iew Favorites <u>T</u> ools <u>H</u> elp		
🚖 🕸 🌈 Industrial Serial Device Server		🟠 🔹 🗟 🔹 📴 Page + 🎯 Tools - 🎽
		Copyright @ 2007 SUNIX Co., Ltd, all rights reserved
SUNIX		Industrial Device Sever
Main Menu Industrial Serial Device Server	System Information	оото запи - пер
System	IP Address	192.168.1.1
System Information	MAC Address	00:18:54:65:46:66
- IP Configuration	Firmware Version	1.00
···· Wireless Configuration		
User Authentication Port Serial Setting		
P Management		
Save/Reboot		
^L Help		
Done		😜 Internet 🔍 100% 🔹 🦷

5.2.1.1 System

INTP		
🏉 Industrial Serial Device Server - Windows	Internet Explorer	
🕒 🗸 🖉 https://192.168.1.1/		Certificate Error 😽 🗙 Google
<u>File Edit View Favorites Tools Help</u>		
🚖 💠 🄏 Industrial Serial Device Server		🟠 🔹 🔝 🐇 🔂 Tools 🗸
		Copyright © 2007 SUNIX Co., Ltd, all rights reserv
SUNIX		Industrial Device Sever
Main Menu Industrial Serial Device Server	SNTP Configura	Go to Sunix • He
System System Information	Name	SUNIX SLAN
SNTP	Time	
" IP Configuration	SNTP	○ Enable ④ Disable
Wireless Configuration	Time Zone	(GMT+08:00)Taipei
[⊕] Port Serial Setting	Local Time	Thu Jan 1 08:38:51 1970
Management Save/Reboot	Time Server	pool.ntp.org Port 123
Help	Console	
	Telnet Console	⊙ Enable ○ Disable
	Apply	
		😜 Internet 🔍 100% 👻

The following table describes the labels in this screen.

Label	Description	
Name	You can set the name of IDS.	
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.	
Console	Telnet Console (SSH) is included for security reasons. In some cases, you may need to disable this function to prevent unauthorized access from internet. The factory default is enable.	

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IP Configuration

You must assign a valid IP address for IDS 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, IDS 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 "192.168.1.1"

🖉 Industrial Serial Device Server - Windows Inter	met Explorer		
		💌 😵 Certificate Error	P -
<u>File Edit V</u> iew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp			
😭 🍄 🌈 Industrial Serial Device Server		🟠 • 🔊 - 🖶 • 📴 Page •	• 💮 T <u>o</u> ols 🕶 🥍
		Copyright @ 2007 SUNIX Co., Ltd.	, all rights reserved
sunix		Industrial Device Sever	
Main Menu Industrial Serial Device Server	IP Configuration	Got	to Sunix • <u>Help</u>
©" <mark>System</mark> ──System Information	Network Interface	LAN	
SNTP	IP Configuration	Static 👻	
Wireless Configuration	IP Address	192.168.1.1	
User Authentication	Netmask	255.255.255.0	
 Port Serial Setting Management 	Gateway	192.168.1.254	
Save/Reboot	DNS Server 1		
ныр	DNS Server 2		
	Auto IP Report		
	Auto Report to IP		
	Auto Report to TCP Port	0	
	Auto Report Interval	0 seconds	
	Apply		
		😜 Internet	🔍 100% 🔹 🔡

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

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.
Switch Mode	Redundant: When the connection between master-link and LAN fails, the IDS 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.

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 "admin".

User Authentication	
Old Password	•••
New Password	
Confirm New Password	
Apply	



5.2.1.2 Port serial setting

Serial configu	ration
Serial	Configuration

	Port1
Port Alias	PortO
Interface	RS232
Baud Rate	38400 💌
Data Bits	8 🕶
Stop Bits	1 💌
Parity	None 💌
Flow Control	None
Force TX Interval Time	0 ms
Performance	⊙ Throughput ○ Latency
Apply	

The following table describes the labels in this screen.

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
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.

Port Profile

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

Serial to Ethernet 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"
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 Serial to Ethernet data
buffer " times out. 0 means disable. Factory default is 0
Ethernet to serial 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.
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

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.

Service Mode

Apply

	Port1
Service Mode	Virtual COM Mode 💌
Idle Timeout	0 (0~65535)seconds
Alive Check	0 (0~65535)seconds
Max Connection	1 ♥ max. connection (1~5)

The following table describes the labels in this screen.

Label	Description
ldle 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.
Max Connection	The number of Max connection can support simultaneous connections are 5, default values is 1.

*Not allowed to mapping Virtual COM from web

Service Mode - TCP Server Mode

In TCP Server Mode, IDS is configured with a unique Port combination on a TCP/IP network. In this case, IDS 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.

Service Mode

Service Mode	
	TCP Server Mode 🚩
TCP Server Port	4000
Idle Timeout	0 (0~65535)seconds
Alive Check	0 (0~65535)seconds
Max Connection	1 v max. connection(1~5)

Apply

Label	Description
TCP Server Port	Set the port number for data transmission.
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.
Max Connection	The number of Max connection can support simultaneous connections are 5, default values is 1.

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.

Service Mode

	Port1
Service Mode	TCP Client Mode 💌
Destination Host	0.0.0.0 : 4000
Idle Timeout	0 (0~65535)seconds
Alive Check	0 (0~65535)seconds
Connect on	💿 Startup 🔘 Any Character
Destination Host	Port
1. 0.0.0.0	65535
2. 0.0.0.0	65535
3. 0.0.0.0	65535
4. 0.0.0.0	65535
Apply	

Label	Description
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 Character	The TCP Client will build TCP connection once the connected serial device starts to send data.



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

	Port1	
Service Mode	UDP Mode 🖌	
Listen Port	4004	
Host start IP	Host end IP	Send Port
1. 192.168.0.1	192.168.0.100	20000
2. 0.0.0.0	0.0.0.0	65535
з. 0.0.0.0	0.0.0.0	65535
4. 0.0.0.0	0.0.0.0	65535
Apply		

5.2.1.3 Management Accessible IP Settings

Accessible IP 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 IDS. You can choose one of the following cases by setting the parameter.

- 1. 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").
- 2. 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 Access IP Control List

No.	Activate the IP	IP Address	Netr	nask	
1					
2					
з					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

SMTP/SNMP Configuration

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 IDS-Tools. SMTP/SNMP Configuration

E-mail Settings			
SMTP Server	Port		
My server requires authentication			
User Name			
Password			
E-mail Sender			
E-mail Address 1			
E-mail Address 2			
E-mail Address 3			
E-mail Address 4			
SNMP Trap Server			
SNMP Server 1			
SNMP Server 2			
SNMP Server 3			
SNMP Server 4			
Community			
Location			
Contact			
Syslog Server			
Syslog Server IP			
Syslog Server Port	Π		



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

System Event Configuration			
Device Event Notification			
Hardware Reset (Cold Start)	SMTP Mail	🔲 SNMP Trap	🔲 Syslog
Software Reset (Warm Start)	SMTP Mail	🔲 SNMP Trap	🔲 Syslog
Login Failed	SMTP Mail	🔲 SNMP Trap	🔲 Syslog
IP Address Changed	🔲 SMTP Mail	🔲 SNMP Trap	Syslog
Password changed	SMTP Mail	🔲 SNMP Trap	🔲 Syslog
Access IP Blocked	SMTP Mail	🔲 SNMP Trap	🔲 Syslog
Redundant Power Changed	SMTP Mail	🔲 SNMP Trap	Syslog
Redundant Ethernet Changed	🔲 SMTP Mail	🔲 SNMP Trap	🔲 Syslog
SNMP Access Failed	SMTP Mail	🔲 SNMP Trap	🔲 Syslog
Port Event Notification			
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

Apply

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).	
Start)	When performing a cold start, IDS 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	
Start)	performing a warm start, IDS will automatically send an E-mail, log information or	
	SNMP trap after reboot.	
Login Failed	When an unauthorized access from the Console or Web interface, a notificatio	
	will be 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	
DL shaws ad	communication equipment is powered off. A Notification will be sent.	
RI changed	When RI (Ring Indicator) signal changes, it indicates an incoming call. Notification will be sent.	
CTS changed	When CTS (Clear To Send) signal changes, it indicates that the transmission	
CT3 changed	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	
i on connected	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.	

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5.2.1.4 Save/Reboot

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

The following table describes the labels in this screen.

Label	Description
Load Factory Default	Load default configuration except settings of Network. If you want load all factory default, you should press " Reset " button on the device (Hardware restore).
Import	Restore the previous exported configuration.
Configuration	
Export	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).

5.3 Configuration by SSH Console

5.3.1 CONNECT TO IDS

You can use SSH Tool (e.g., PuTTY) to access SSH console of IDS. The SSH console interface is shown below.





6

Technical Specifications

LAN Interface	
RI45 Ports	IDS-3012 :
וטד דעדט ו טונס	$2 \times 10/100$ Base-T(X), Auto MDI/MDI-X
	IDS-3011 / IDS-2011 / IDS-1011 :
	1 x 10/100Base-T(X), Auto MDI/MDI-X
Protection	Built-in1.5KV magnetic isolation
Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, ARP/RARP, DNS,
	SNMP MIB II, HTTPS, SSH
Serial Interface	
Interface	IDS-3012 ~
	1x RS232 / RS422 / 4(2)-Wire RS485 + Redundant
	LAN. Which can be configured by IDS-Tools
	IDS-3011 ~
	1x RS232 / RS422 / 4(2)-Wire RS485. Which can
	be configured by IDS-Tools
	IDS-2011 ~
	1x RS422 / 4(2)-Wire RS485. Which can be
	configured by IDS-Tools
	IDS-1011 ~
	1x RS232. Which can be configured by IDS-Tools
Connector	IDS-3012 / IDS-3011 / IDS-1011 : Male DB9
David Data	IDS-2011 : 5-pin Terminal Block
Baud Rate	110 bps to 460.8 Kbps
Data Bits	5, 6, 7, 8
Parity Store Bits	odd, even, none, mark, space
Stop Bits	
RS-232 signals	TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND
RS-422 signals RS-485 (4 wire) signals	Tx+,Tx-, Rx+, Rx-,GND Tx+,Tx-, Rx+, Rx-,GND
RS-485 (2 wire) signals	Data+, Data-,GND
Flow control	XON/XOFF, RTS/CTS, DTR/DSR
Protection	Built-in15KV ESD protection
LED Indicators	PWR 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.
	ETH1 (2) Link / ACT:
	Orange ON/Blinking: 10 Mbps Ethernet
	Green ON/Blinking: 100 Mbps Ethernet
Power Requirements	
Power Input Voltage	PWR1: 12 ~ 48VDC in power jack
Deverse Delevity Dretestien	PWR1: 12 ~ 48VDC in 3-pin Terminal Block
Reverse Polarity Protection Power Consumption	Present 4 Watts Max
Environmental	4 Watts Max
Operating Temperature	-10 to 60 °C (14 to 140 °F)
Storage Temperature	-20 to 85 °C (-4 to 185°F)
Operating Humidity	5% to 95%, non-condensing
Mechanical	so to solo, non condensing
Dimensions(W x D x H)	72mm(W)x125mm(D)x31mm(H)
Casing	IP-30 protection
Regulatory Approvals	
Regulatory Approvals	CE class A
	RoHS
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS),
	EN61000-4-4 (EFT), EN61000-4-5 (Surge), Level 3,
	EN61000-4-6 (CS), Level 3
Shock	IEC60068-2-27
Free Fall	IEC 60068-2-32
Vibration	IEC 60068-2-6



6.1 Contact Information

Customer satisfaction is our number one concern, and to ensure that customers receive the full benefit of our products, SUNIX services has been set up to provide technical support, driver updates, product information, and user's manual updates.

The following services are provided

E-mail for technical support	. info@sunix.com.tw
World Wide Web (WWW) Site for product information:http:	//www.sunix.com.tw