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2016-11-25

DVW Series Industrial IEEE 802.11 a/b/g/n Wireless AP/WDS/Client/Gateway User Manual

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DVW Series Industrial IEEE 802.11 a/b/g/n Wireless AP/WDS/Client/Gateway User Manual

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Chapter 1 Introduction

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About This Manual

The user manual is suitable for **DVW-W02W2-E2** and **DVW-W02W2-E2-CN**. Owing to the limitation of the radio frequency policy, if you need to use the Delta DVW series products in China areas, please refer to the model name **DVW-W02W2-E2-CN** on the Delta website, or contact our branch offices or distributors.

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Operations in the 5.15-5.25GHz band are restricted to indoor usage only.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Country Code selection feature to be disabled for products marketed to the US/CANADA.

The equipment intended be used in telecommunication center.

CE Declaration of Conformity

The DVW series switches are CE certificated products, they could use in any kind of the environments under CE environment specification. For keeping more safe application, we strongly suggest to use the CE-compliant industrial enclosure products.

NCC 警語

電磁波曝露量 MPE 標準值(MPE) 1mW/cm2，送測產品實值為 0.065mW/cm2

經型式認證合格之低功率射頻電機，非經許可，公司，商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。
低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。
前項合法通信，指依電信法規定作業之無線電通信。 低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

無線傳輸設備 (UNII)
在 5.25-5.35 秭赫頻帶內操作之無線資訊傳輸設備，限於室內使用。
無線資訊傳輸設備忍受合法通信之干擾且不得干擾合法通信；如造成干擾，應立即停用，俟無干擾之虞，始得繼續使用。
無線資訊傳設備的製造廠商應確保頻率穩定性，如依製造廠商使用手冊上所述正常操作，發射的信號應維持於操作頻帶中。

1.1 Feature

Thank you for purchasing the DVW Industrial Wireless AP/WDS/Client/Gateway. The DVW series wireless devices are equipped with the intelligent alarm function, and allow the wide range of operating temperature (-40 to 75℃). The DVW series devices are designed to support the application in any rugged environment and comply with UL, CE and FCC standards.

1.1.1 High Performance Network Technology

- 10/100/1000Base-TX
- Auto negotiation speed
- Auto MDI/MDI-X
- 802.11a/b/g/n, up to 450 Mbps

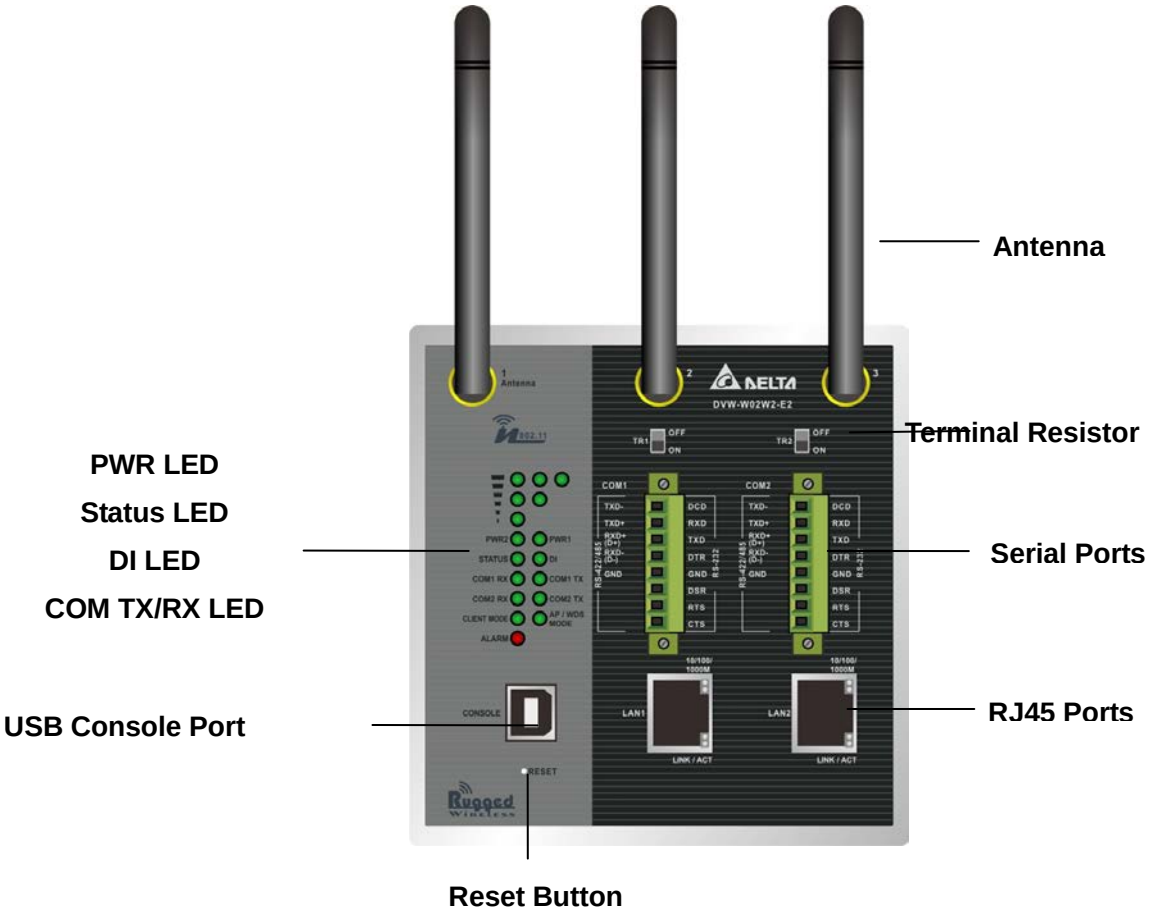
1.1.2 Industrial Grade Reliability

- Redundant dual DC power inputs
- 1 set of Digital Input
- 1 set of Relay Alarm

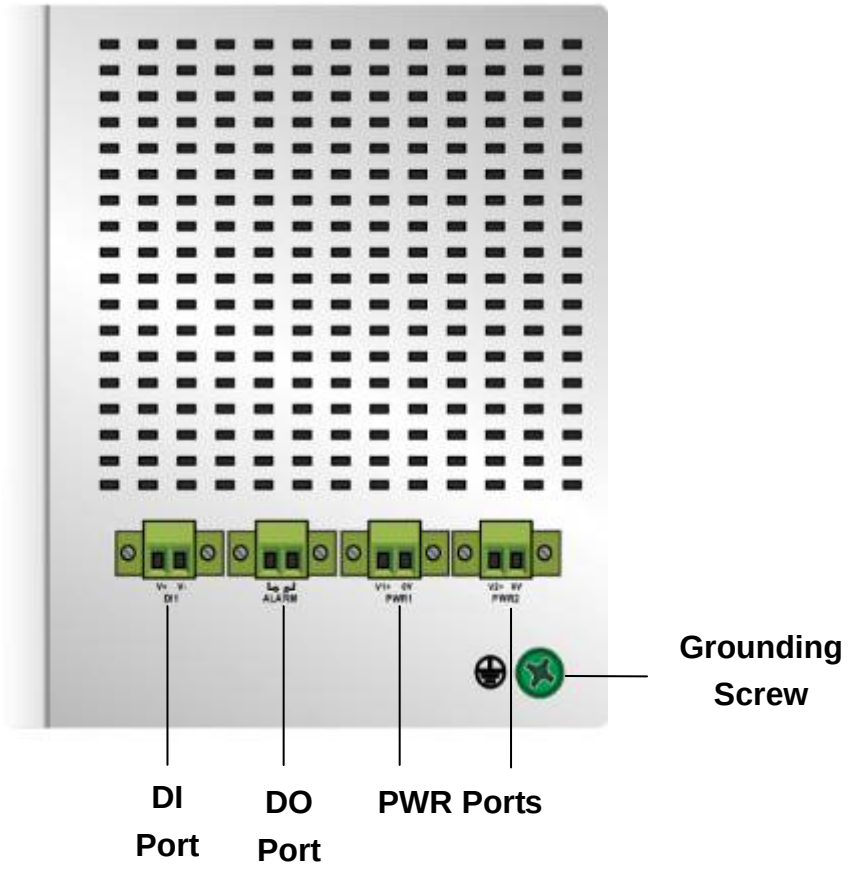
1.1.3 Robust Design

- Operating temperature: -40~75℃
- Storage temperature: -40~85℃
- Humidity: 5%~95% (non-condensing)
- Protection: IP40

1.1.4 Front Panel Ports and LEDs

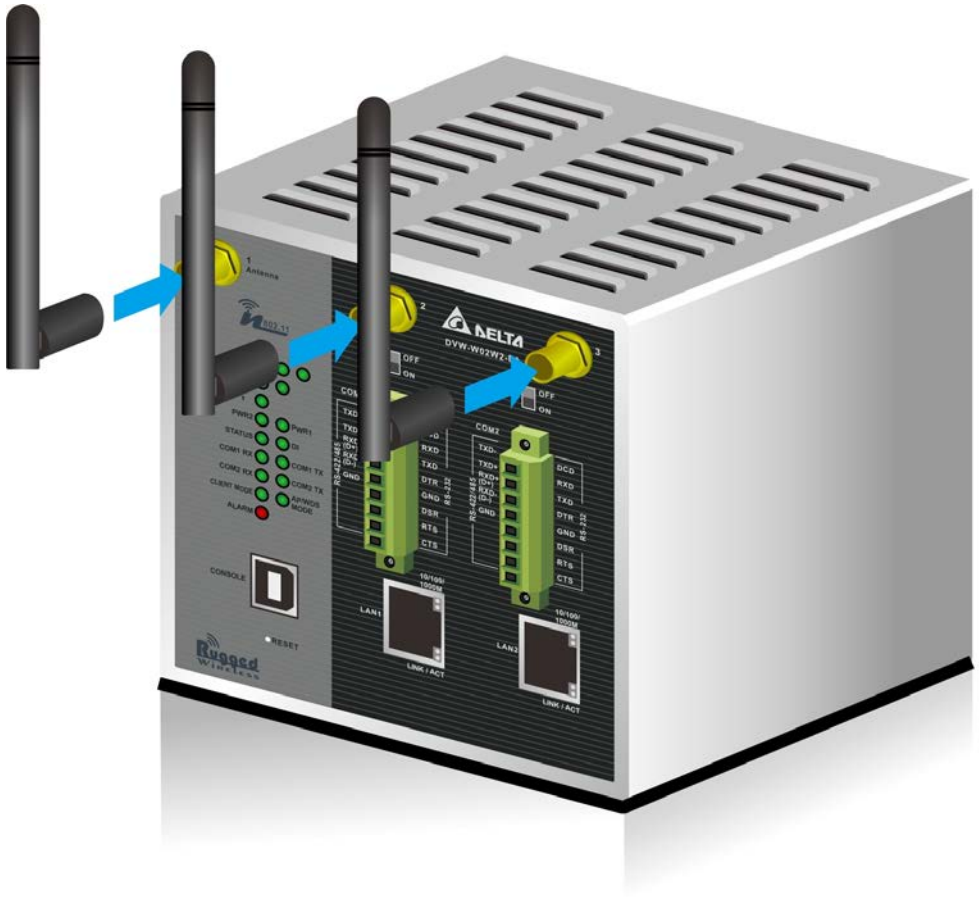


1.1.5 Buttom Panel



1.2 Antenna Installation

Please connect 3 antennas to the DVW device. You can adjust the direction or angle of the antennas if the wireless signal is unstable.



1.2.1 Package Checklist

- One Delta DVW Wireless AP/WDS/Client Gateway
- Omni-directional Antenna x3
- Wall mounting Plate x1
- USB Type A to Type B console cable x1
- User manual and software CD
- Instruction Sheet

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Chapter 2 User Interface Introduction

Table of Contents

2.1 USB Console Configuration

Delta DVW devices supports configuration using CLI interface, it mainly includes six parts:

1. **Exit** (Exit this CLI session)
2. **Maintenance** (some utility commands for maintenance related details)

   load_default
3. **network_setting** (some utility commands for network details)

get_dns	get_gateway	get_ip_address
get_ip_configuration	get_subnet_mask	set_dns
set_gateway	set_ip_address	set_ip_configuration
set_subnet_mask	view_setting	
4. **restart** (restart the device)
5. **system_info_setting** (some utility commands for system information related details)

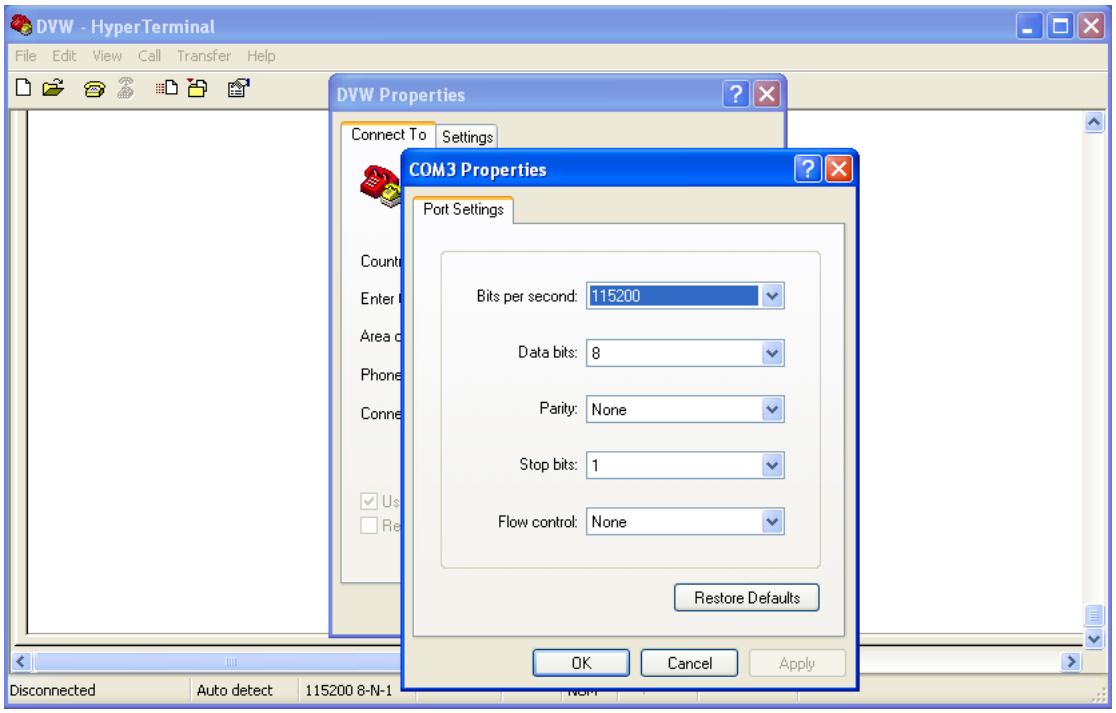
get_device_contact_info	get_device_description	get_device_location
get_device_name	set_device_contact_info	set_device_decription
set_device_location	set_device_name	view_setting
6. **time_setting** (some utility commands for time related details)

get_local_time	get_timeserver1	get_timeserver2
get_timezone	set_local_time	set_timeserver1
set_timeserver2	set_timezone	view_setting

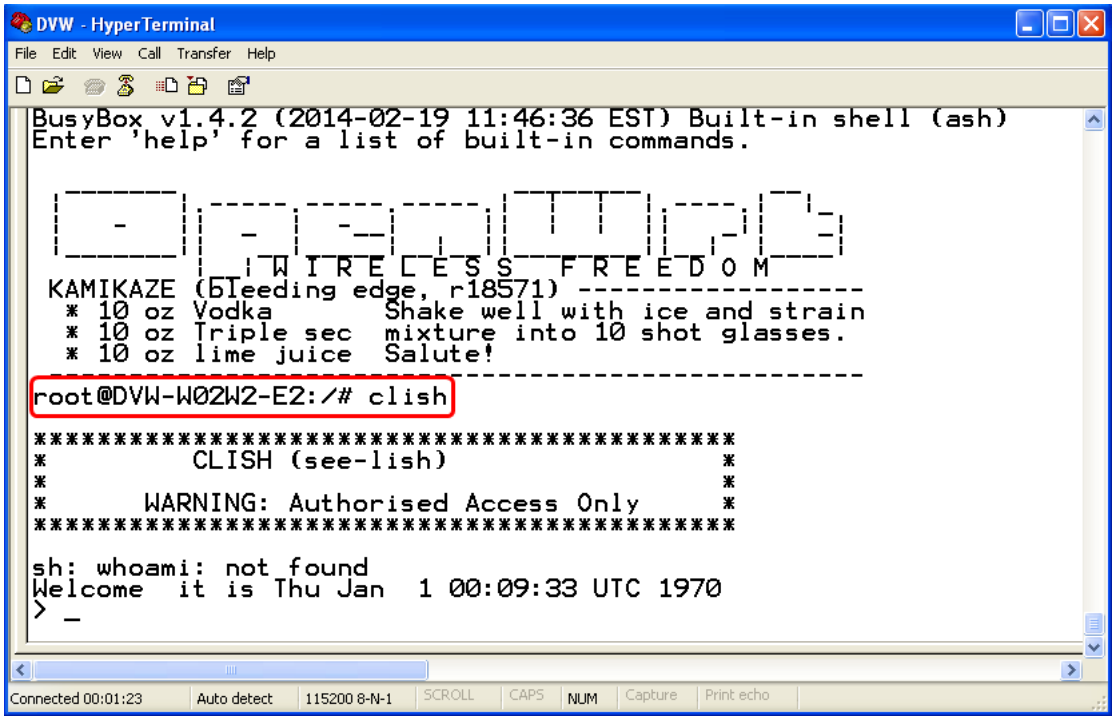
You can use terminal software to connect to Delta DVW devices. Before you use CLI interface, please plug USB cable on USB port with baud rate 115200. The inactivity timeout value on a serial port connection can be configured between 0 and 160 minutes. (Value 0: disable the timeout.)

Below is an example to show you how to set the device name.

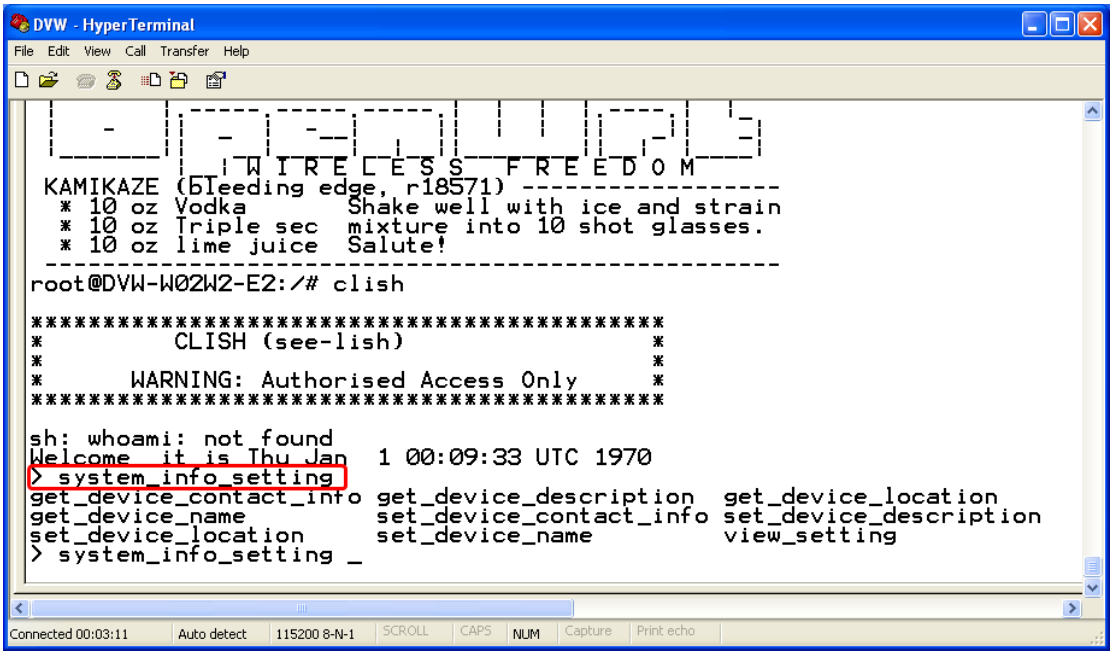
1. Open terminal software, and select an appropriate COM port for **Console Connection**, **115200** for **Baud Rate**, **8** for **Data Bits**, **None** for **Parity**, and **1** for **Stop Bits, None** for **Flow Control**.



2. Type **clash** and then press **Enter**.

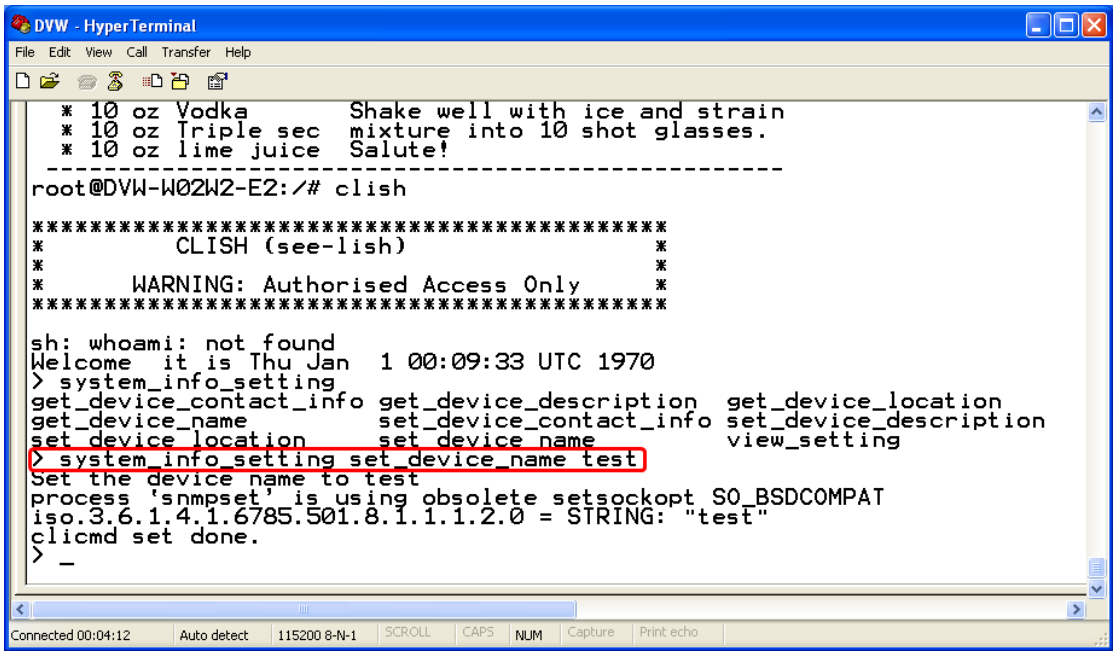


3. Type **system_info_setting** and then press **Enter**.

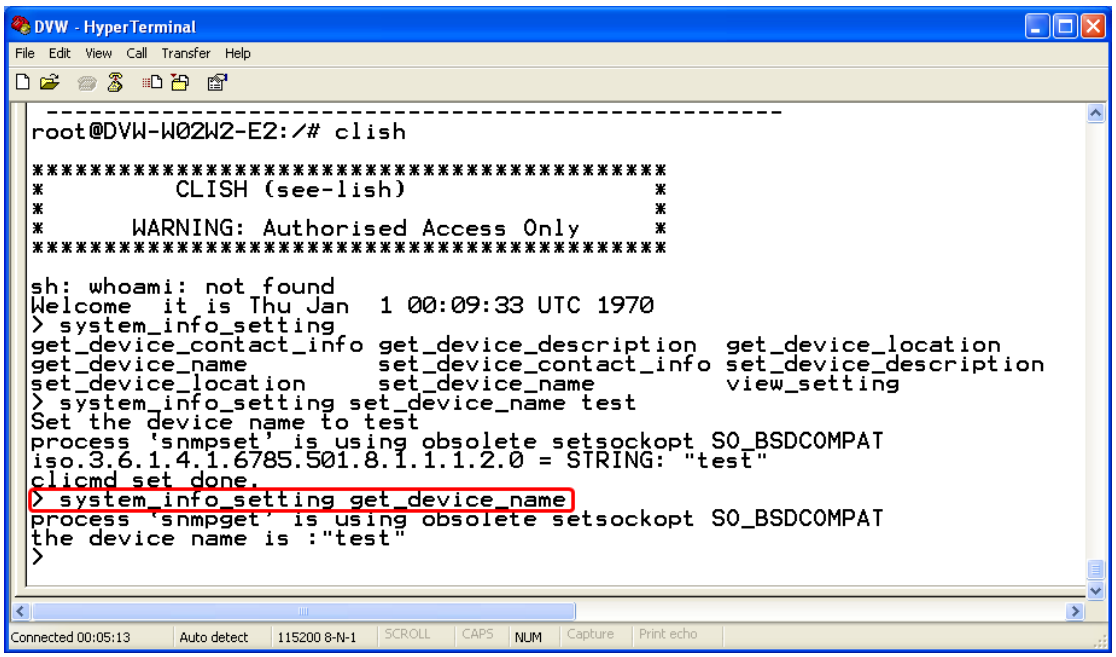


PS. You can make full by use **TAB** to complete the command that you want to type.

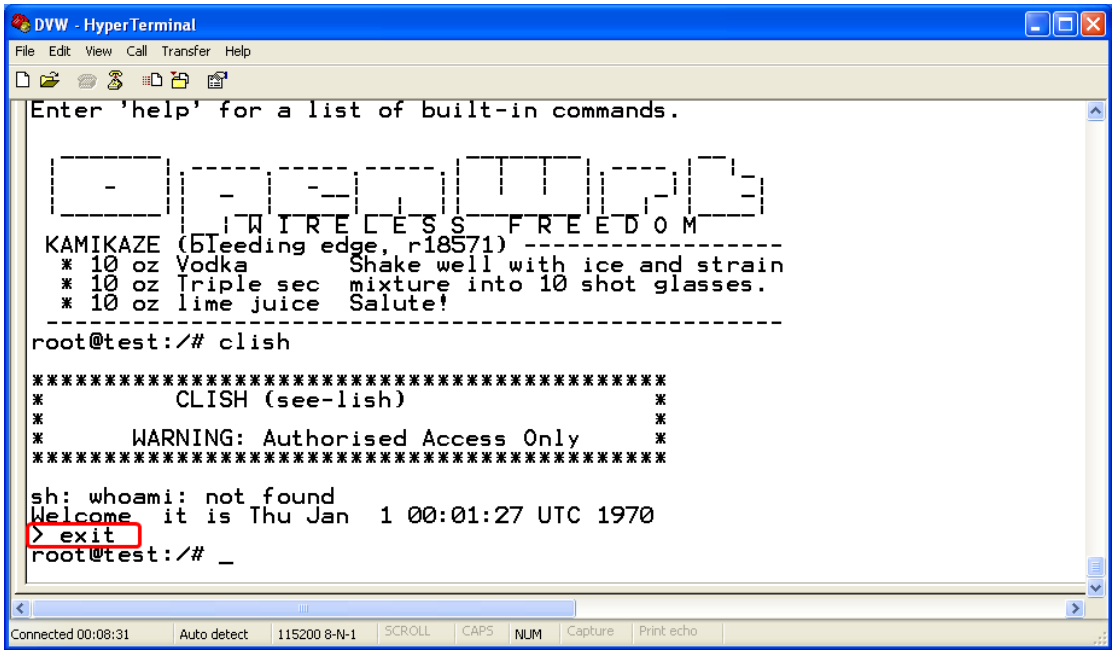
4. Type **set_device_name** and the **new device name**, such as “test”, and then press **Enter**.



5. The device name had changed to “test”, you can use “**get_device_name**” to see it.



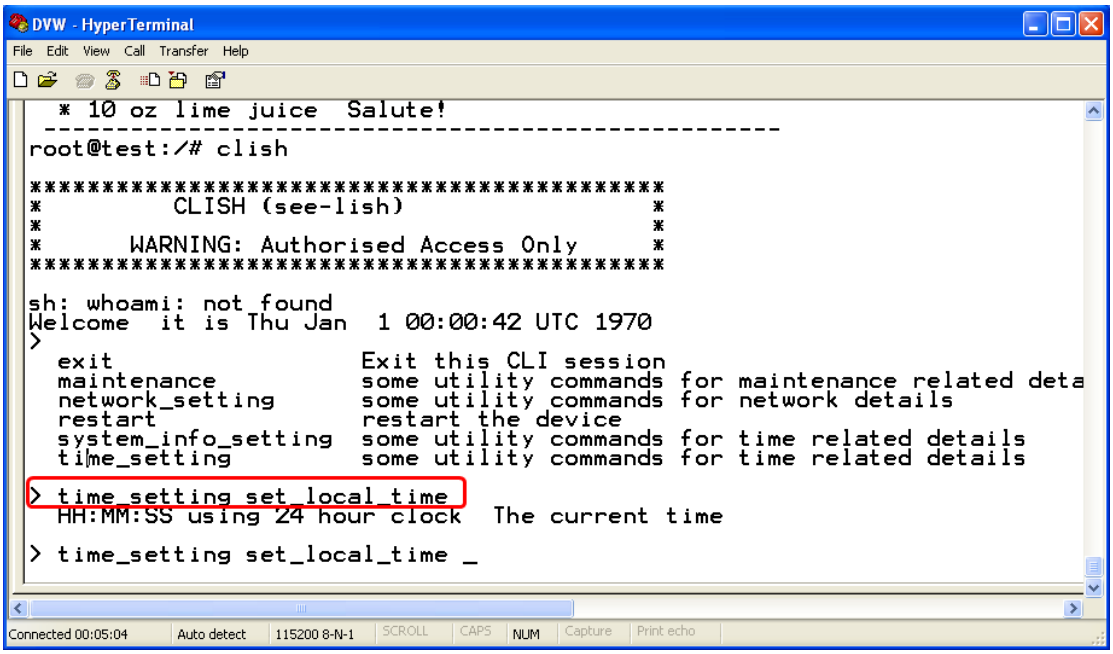
6. Type **exit** to exit this CLI session.



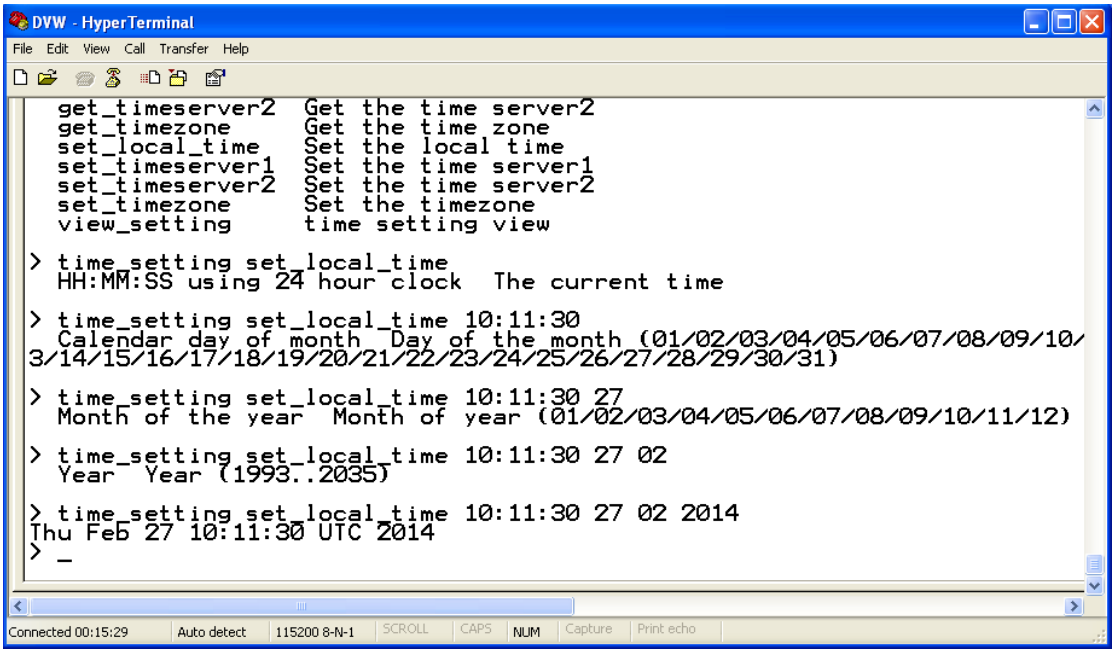
7. Sometimes if you don't know how to use the command (such as what does this command mean, or how to set the parameter in right format, etc), you can type "**?**" to see the help information.

   For example, if you want to set the local time to 2014/02/27 10:11:30, you may know type time_setting and then type set_local_time, but the next? How should I input the time? You can type **?** to see the help information.

   Complete command: "**time_setting set_local_time ?**" (After you click "**?**", the help information will display.)



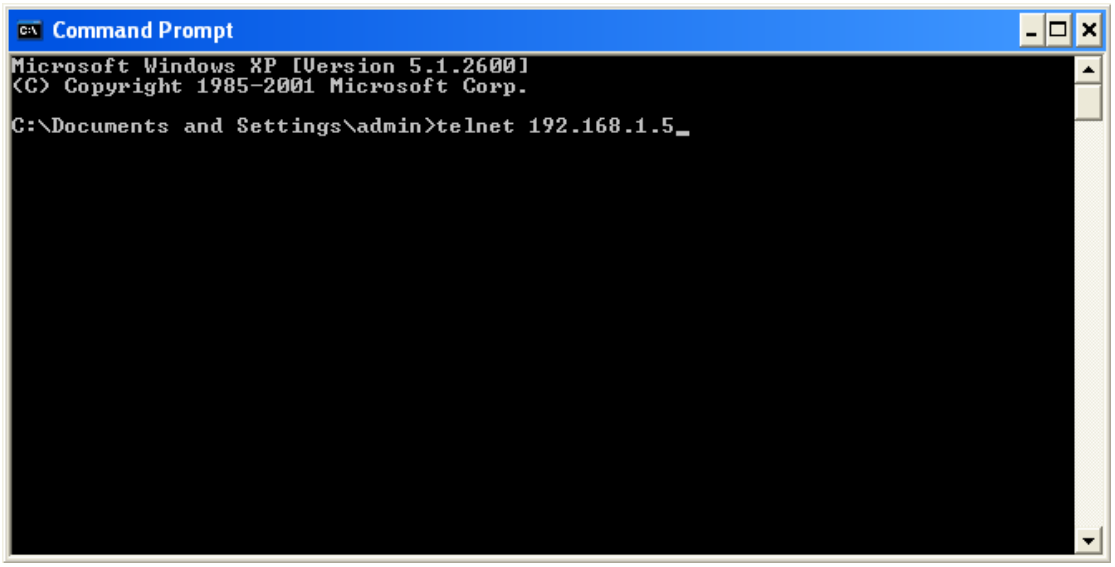
8. Finally, you had got to know type **10:11:30 27 02 2014**



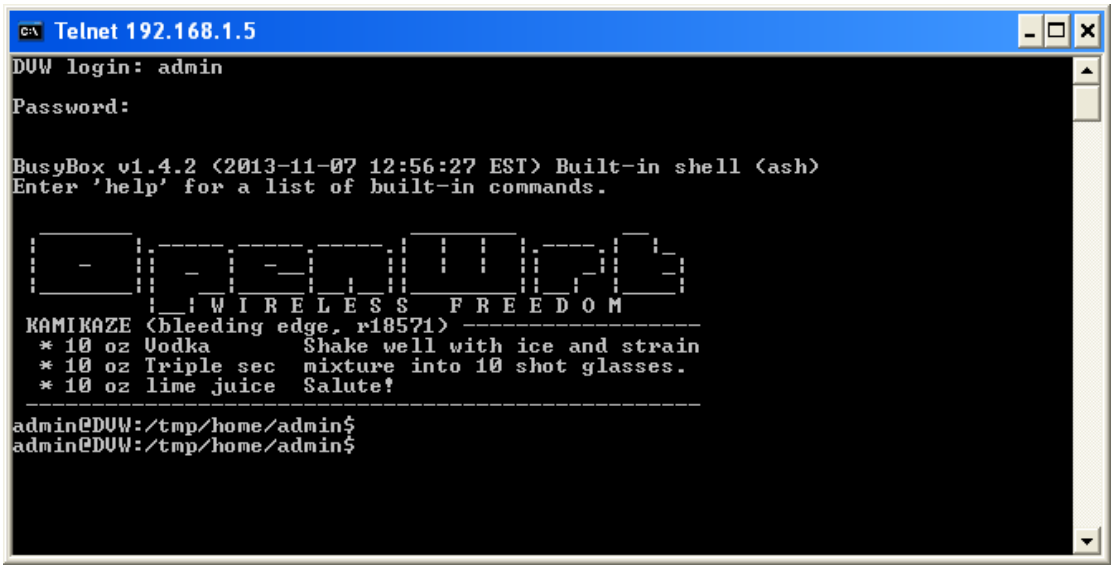
2.2 Telnet Console Configuration

Delta DVW device supports telnet server function; it can be globally enabled or disabled. The user can use all CLI command over a telnet session.

1. Open a Command Prompt and input “telnet 192.168.1.5” to login to Delta DVW device.



2. After input user name and password, you can use CLI command to control the device.



2.3 Web Browser Configuration

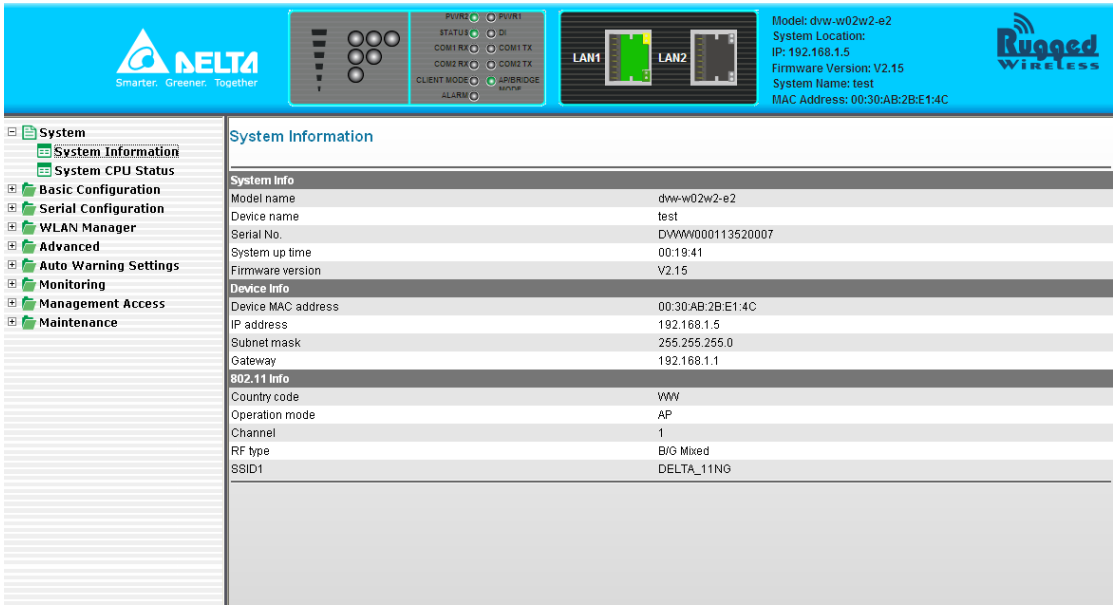
Delta DVW devices support a friendly web interface for normal user to configure the switch. You can monitor the port status of Delta DVW device, and configure the settings of each function via web.

1. Open a web browser and connect to 192.168.1.5 or **http://www.deltawifi.net**. Input user name and password.

   Username: **admin**

   Password: **password**

2. You can use the menu tree in left side frame to find the function you want to configure. And configure the detail settings in right side frame. The port status and LED status on the DVW device can be monitored on the top frame.



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Chapter 3 Featured Functions

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3.1 System

This group includes System Information and System CPU Status.

3.1.1 System Information

This page summarizes the current status of system. The information is categorized into several groups: System Info, Device Info and 802.11 Info.

System Information

System Info	
Model name	dvw-w02w2-e2
Device name	DVW-W02W2-E2
Serial No.	□□□□□□□□□□□□□□□□
System up time	06:18:20
Firmware version	V2.3
Device Info	
Device MAC address	00:03:7F:EF:77:11
IP address	192.168.1.250
Subnet mask	255.255.255.0
Gateway	0.0.0.0
802.11 Info	
Country code	WW
Operation mode	AP
Channel	1
RF type	B/G/N Mixed
SSID1	DELTA_11NG

3.1.2 System CPU Status

This page summarizes the current status of CPU. It includes Running Time, Total Powered Time, CPU Usage, RAM Total and RAM Available. These values should be grayed out and could not be edited.

System CPU Status

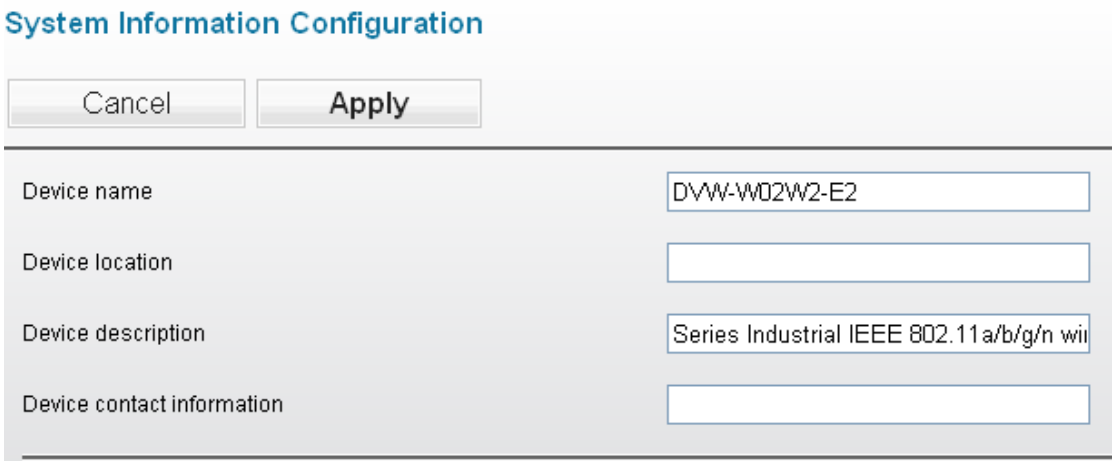
Running Time:	06hours, 21mins, 14secs
Total Powered Time:	03days, 00hours, 00mins
CPU Usage:	2.16
RAM Total:	515076
RAM Available:	471336

3.2 Basic Configuration

The basic configuration group includes most common settings, and administrator can maintain control the DVW wireless devices in this group.

3.2.1 System Information Configuration

The System Information Configuration includes Device name, Device location, Device description and Device contact information. By default, the Device name is **DVW-W02W2-E2** and the Device description is **Series Industrial IEEE 802.11a/b/g/n wireless AP/bridge/client**.



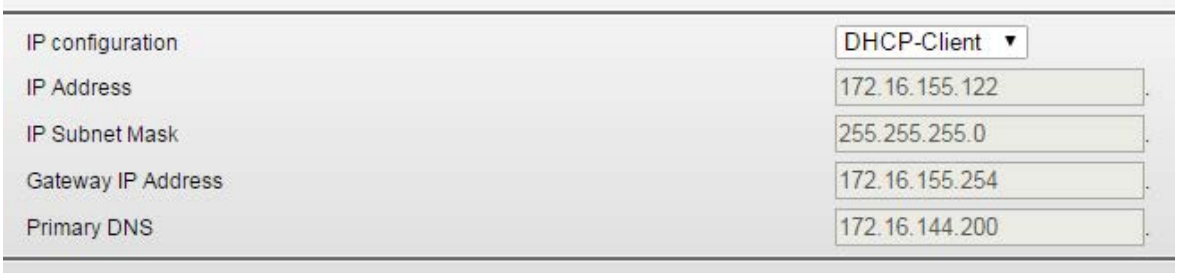
Item	Description	Factory Default
Device name	This field displays the name of the device. The default value is the model name.	DVW-W02W2-E2
Device location	This field displays the location of the device.	None
Device description	This field displays the description of the device.	Industrial IEEE 802.11a/b/g/n wireless AP/WDS/Client/Gateway
Device contact information	This field displays the contact information of the device.	None

3.2.2 Network Configuration

The Network Configuration allows you to modify **IP Configuration, IP Address, IP Subnet Mask, Gateway IP Address** and **Primary DNS**. From the IP configuration, there are various options under the Multi-Mode, including **DHCP-Client, Static, BOOTP-Client and DHCP-Server** for users to choose from.

DHCP-Client:

If there is a DHCP server on the network, and the DVW series is in DHCP-client mode, the DVW series can receive requests from the DHCP server. If there is no DHCP server presented on the network, the IP address will be configured to **192.168.1.5** and the IP subnet mask to **255.255.255.0**.

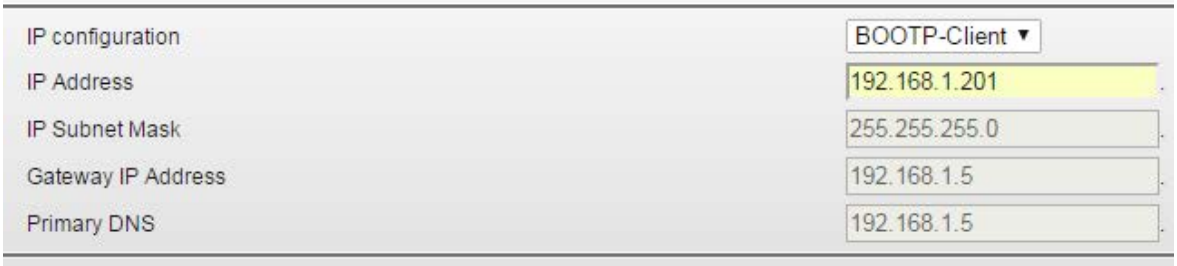


Static:

Users can define the IP Address, IP Subnet Mask, Gateway IP Address and Primary DNS.

BOOTP-Client:

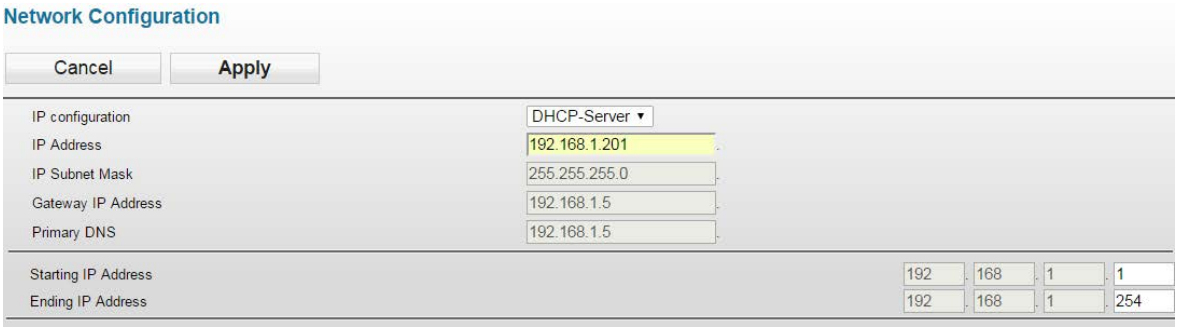
If there is a BOOTP server on the network, and the DVW series is in BOOTP mode, the DVW series can receive requests from the BOOTP server. If there is no BOOTP server presented on the network, the IP address will be configured to **192.168.1.5** and the IP subnet mask to **255.255.255.0**.



DHCP-Server:

- When the DHCP server receives requests from the end clients, the DVW series will assign a **Dynamic IP Address** to other clients. When the DHCP-Server and BOOTP-Server coexist and are activated at the same time, the IP address will be configured to **192.168.1.5** and IP subnet mask to **255.255.255.0**.

- The DHCP pool will start from 192.168.1.1 to 192.168.1.254.



Description	Factory Default
IP Configuration	
Specify the IP status of the network interface. • **DHCP-Client:** The DVW series receives its IP configuration settings from the DHCP server. • **Static:** Specify the static IP address manually. • **BOOTP-Client:** The DVW series receives its IP configuration-settings from the BOOTP server. • **DHCP-Server:** When the DHCP server receives requests from the end clients, the DVW series will assign a Dynamic IP Address to other clients.	DHCP-Client
IP Address	
Input the IP address of the network interface.	192.168.1.5
IP Subnet Mask	
Input the IP subnet mask of the network interface.	255.255.255.0
Gateway IP Address	
Input the default gateway of the network interface.	0.0.0.0
Primary DNS	
Input the primary DNS address of the network interface.	0.0.0.0

Notice:

If the Operation Mode has changed to Salve Mode, you cannot configure the network settings. (Grayed out). For details, please refer to section 3.4.1.4 WDS Master Mode / Slave Mode for more information.

Description	Factory Default

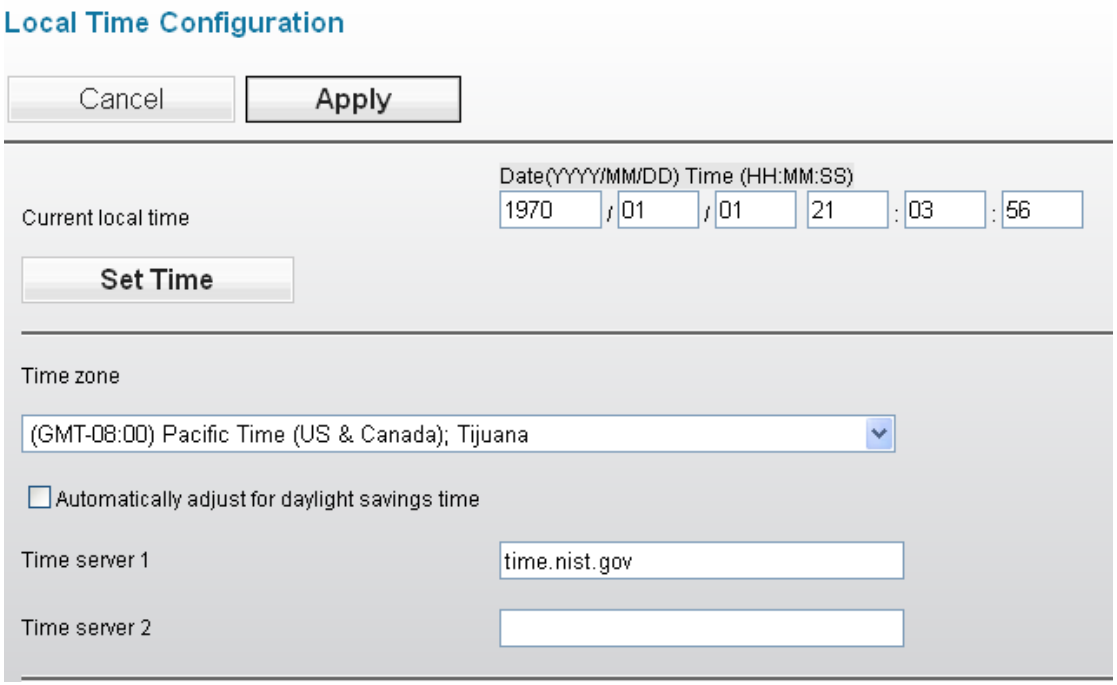
3

3.2.3 Time Configuration

3.2.3.1 Local Time Configuration

The local time can be set manually or get from NTP server dynamically. In order to get local time dynamically, user should configure the time zone and time servers correctly. If it belongs to DST area, please also enable "Automatically adjust for daylight savings time".

The **Current local time** shows the DVW's system time when you open this web page. You can click on the **Set Time** button to activate the updated date and time parameters.



Description	Factory Default
Current local time	
The date and time can be configured as local time. The 24-hour format:	None

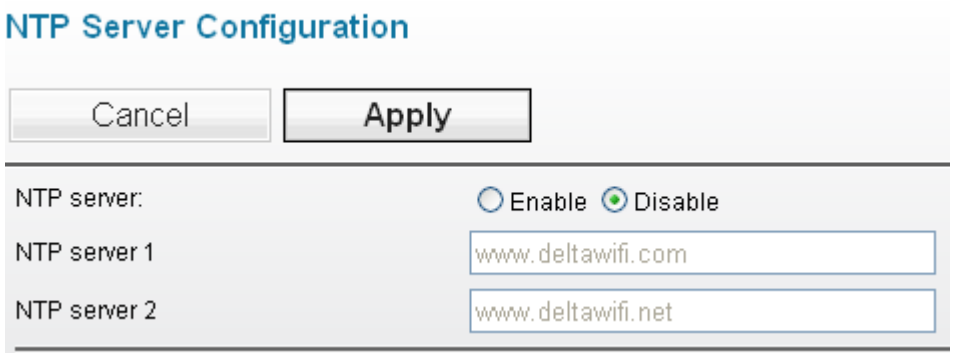
Description	Factory Default
YYYY/MM/DD HH:MM:SS	
Time zone	
The time zone setting can be configured as conversion from GMT (Greenwich Mean Time) to local time.	GTM+08:00
Automatically adjust for daylight savings time	
Daylight saving time (DST) also summer time is the practice of advancing clocks during the lighter months so that evenings have more daylight and mornings have less.	Disabled
Time server 1/2	
Specify the IP address or domain name of NTP time server. The time of the second server will be used if the first server can't be connected.	Enabled

Notice:

It is highly suggested that users manually set up the device time in the following situations, when there is no NTP time server or no internet connection or when the device has not been operated for a long time, or for the initial setup .

3.2.3.2 NTP Server Configuration

When Delta DVW series get valid local time, DVW series can enable NTP Server to supply the time service for LAN clients.



Description	Factory Default
NTP server	
Specify whether the NTP server is enabled. • **Enable:** The NTP server function is enabled.	Disabled

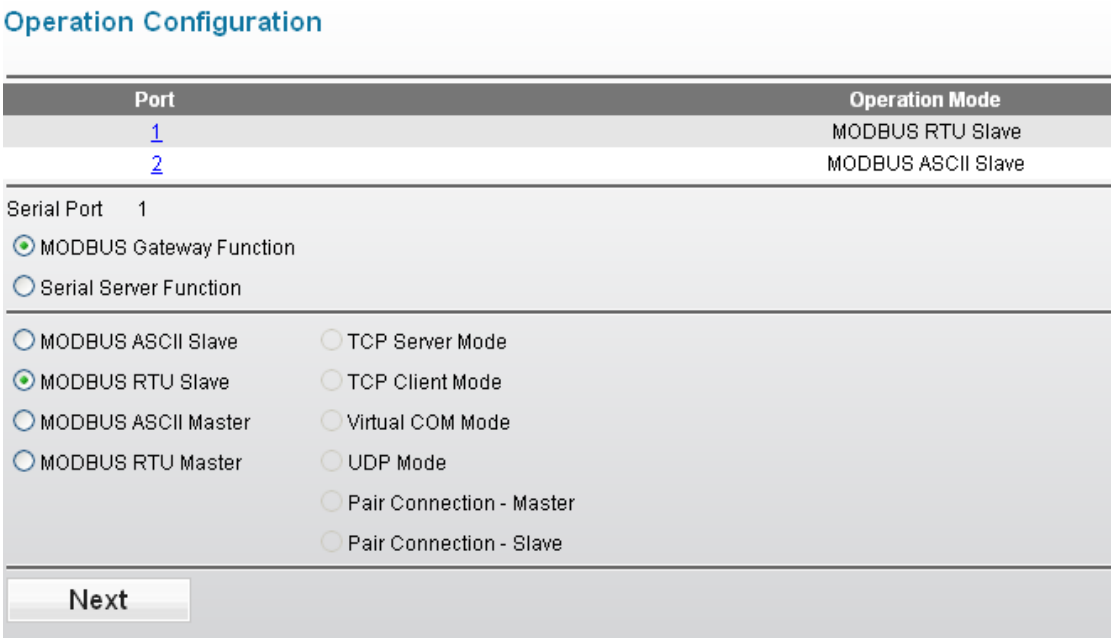
Description	Factory Default
• **Disable:** The NTP server function is disabled.	
NTP server 1/2	
Specify the IP address or domain name of NTP server of DVW series. The second NTP server will be used if the first NTP server can't be connected.	www.deltawifi.com www.deltawifi.net

3.3 Serial Configuration

DVW provides 2 kinds of serial function, MODBUS Gateway function and Serial Server function. MODBUS Gateway function can convert data from MODBUS to Ethernet or from Ethernet to MODBUS. Serial Server includes different modes for different interaction in the network.

3.3.1 Operation Configuration

If users have requirement about MODBUS Gateway function, DVW series provides MODBUS ASCII/RTU Slave mode and MODBUS ASCII/RTU Master mode. If you have requirement about Serial Server function, DVW series provides TCP Server mode, TCP Client mode, Virtual COM mode, UDP mode, Pair Connection mode – Master and Pair Connection mode – Slave.

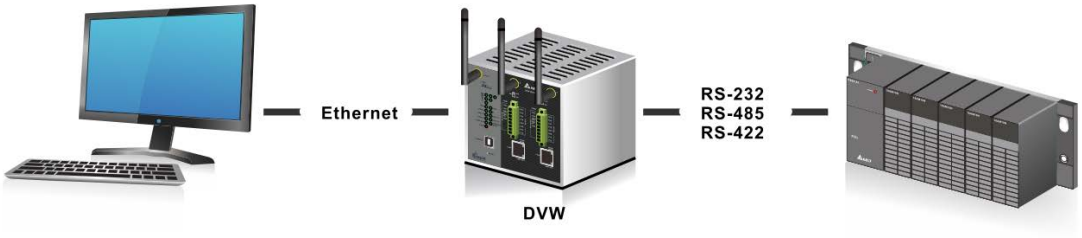


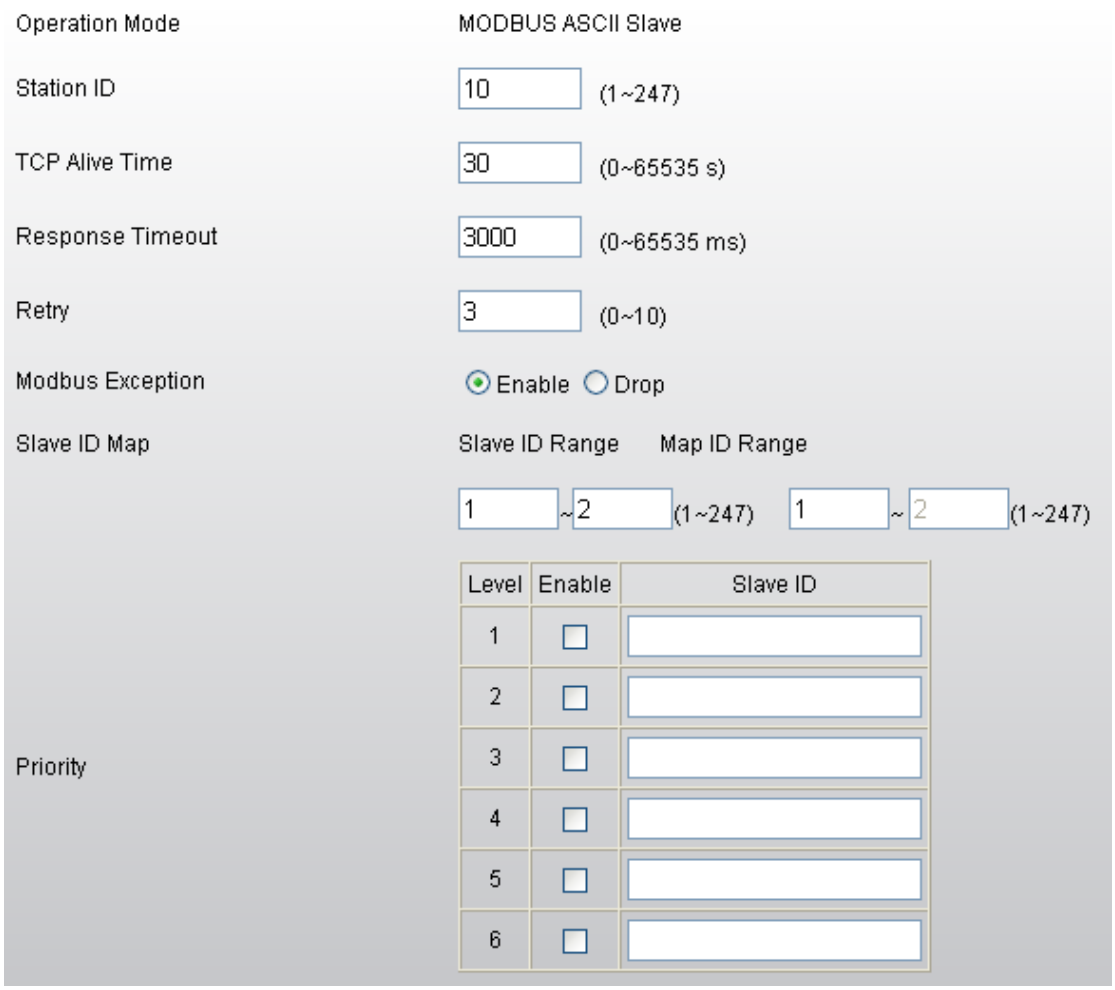
3.3.1.1 MODBUS ASCII/RTU Slave

When a MODBUS master device send a request message to MODBUS slave device, the MODBUS slave device will forward the message according to the slave ID. If the same slave ID is being used in serial network, then the communication will have problem.

Slave ID Map function can help you to create a map ID for the devices which has the same real Station ID. You

can specify the range of map ID on each serial port, and then DVW series will forward the message to the serial device according to the map ID table.



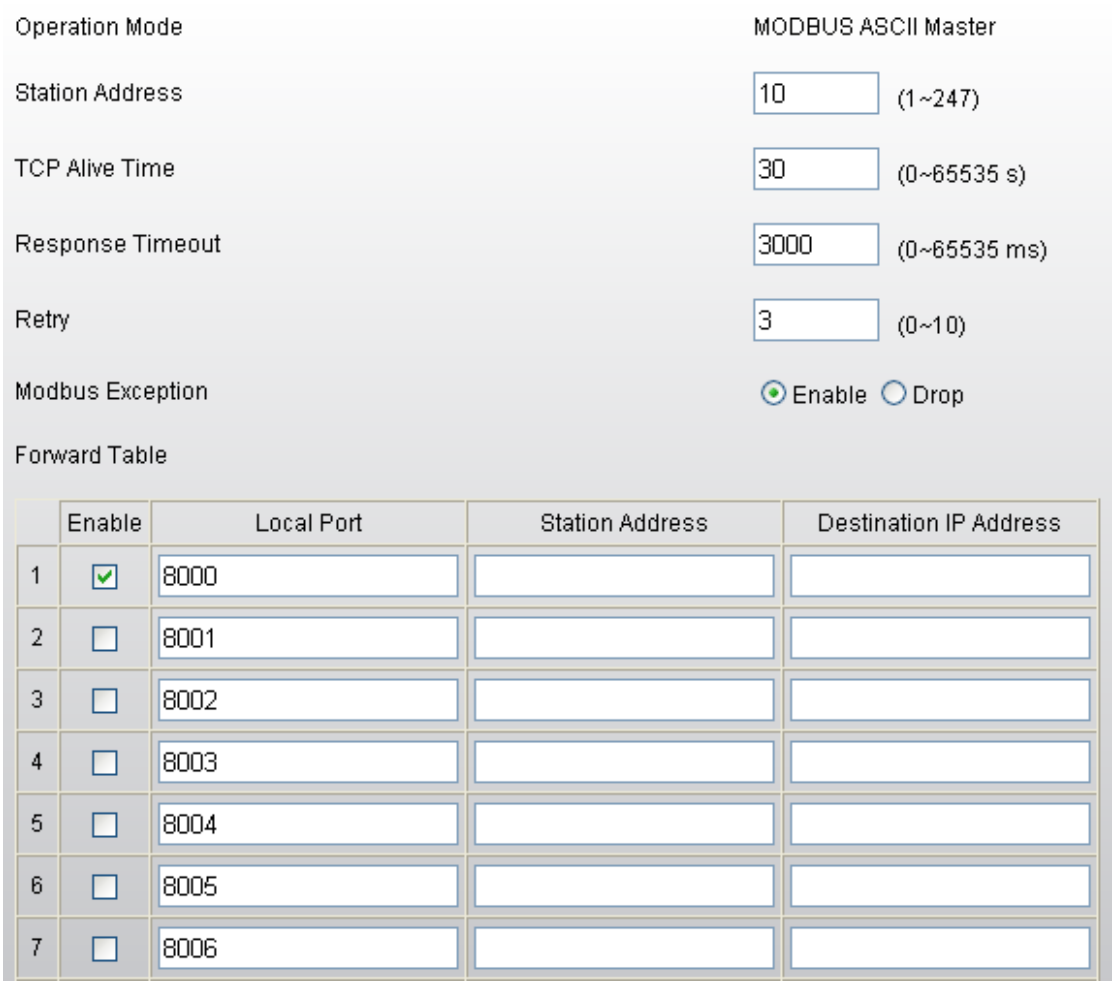


Description	Factory Default
Operation Mode	
Display the operation mode of serial port.	MODBUS ASCII Slave
Station ID	

Description	Factory Default
Specify the station ID of the device.	Port 1: 246 Port 2: 247
TCP Alive Time	
Specify how long the DVW series keeps the TCP session when there is no TCP activity in specified time. If the time is “0”, then the connection will remain open.	30
Response Timeout	
Specify how long the DVW series waits the response from the serial device.	3000
Retry	
Specify the retry time when the time of Response Timeout reached.	3
MODBUS Exception	
Specify whether the device send an exception code back to the client when the response timeout is reached.	Enabled
Slave ID Map	
Specify the mapping table of slave ID. Slave ID Range: Enter the range of real slave ID. Map ID Range: Enter the range of virtual slave ID which DVW series can create.	None
Priority	
Specify the priority of the serial device.	None

3.3.1.2 MODBUS ASCII/RTU Master

If the serial device that connect to DVW series has Ethernet interface, you can specify the station address and destination IP address in forward table. DVW series follows the forward table to forward data to correct serial devices.



Description	Factory Default
Operation Mode	
Display the operation mode of serial port.	MODBUS ASCII Master
Station ID	
Specify the station ID of the device.	Port 1: 246 Port 2: 247
TCP Alive Time	
Specify how long the DVW series keeps the TCP session when there is no TCP activity in specified time. If the time is “0”, then the connection will remain open.	30
Response Timeout	
Specify how long the DVW series waits the response from the serial device.	3000

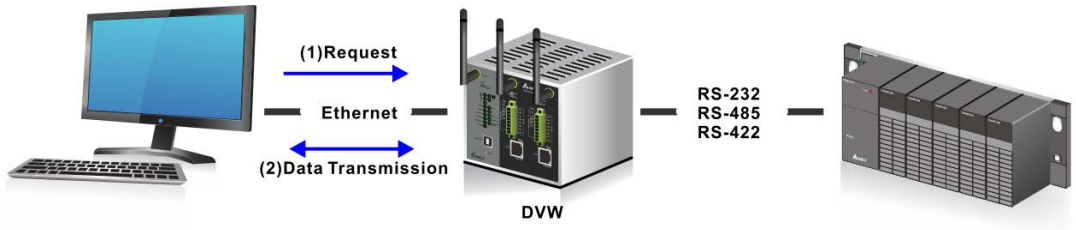
Description	Factory Default
Retry	
Specify the retry time when the time of Response Timeout reached.	3
MODBUS Exception	
Specify whether the device send an exception code back to the client when the response timeout is reached.	Enabled

Forward Table

Description	Factory Default
Enable	
Specify whether the forward information is enabled.	Unticked
Local Port	
The local port of DVW series will create automatically. Port 1: 8000~8031 Port 2: 9000~9031	8000~8031 9000~9031
Station Address	
Specify the station ID of serial devices.	None
Destination IP Address	
Specify the IP address of serial devices.	None

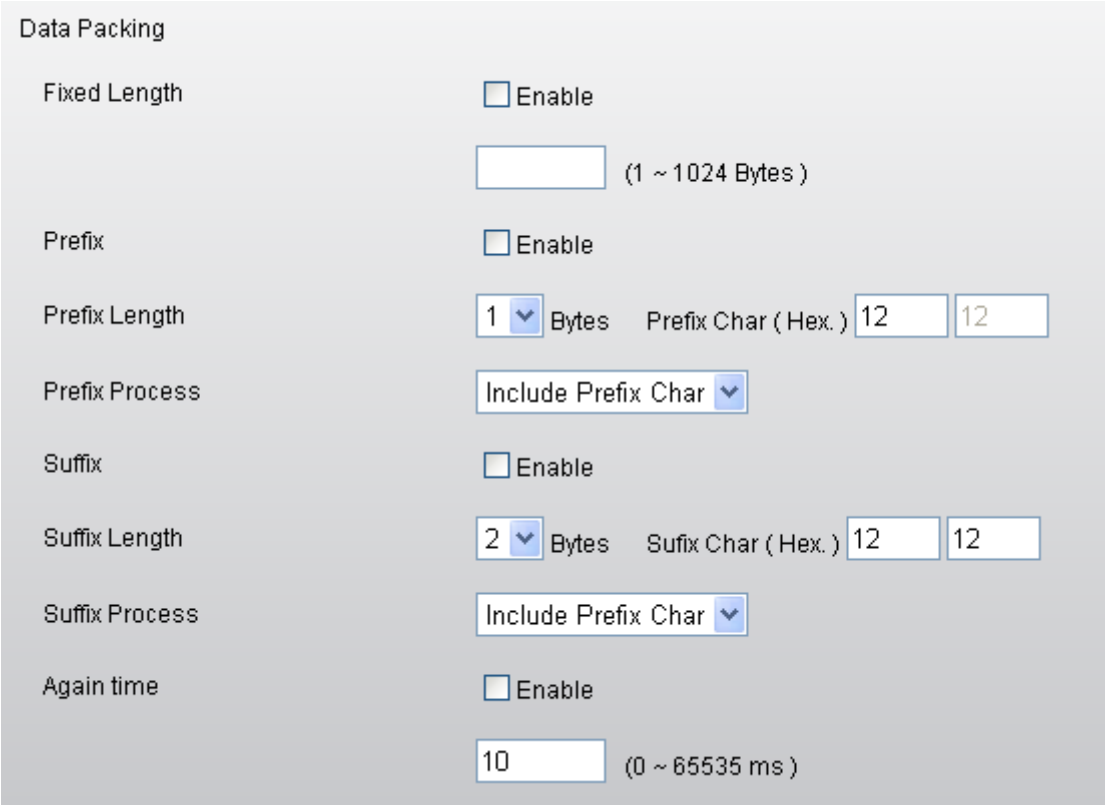
3.3.1.3 TCP Server Mode

In TCP Server Mode, DVW series works as a passive role. DVW series waits the connected requirement from the host computer or device. The host must send a request message to DVW series for establish the connection first. After the connection is established, the data can be transmitted between the host and DVW series.



Operation Mode	TCP Server Mode	
Alive Check Time	30	(0 ~ 65535 s)
Disconnect Time	3000	(0 ~ 65535 s)
TCP Port	3000	(1024 ~ 65535)

Description	Factory Default
Operation Mode	
Display the operation mode of serial port.	TCP Server Mode
Alive Check Time	
Specify how long the DVW series sends a packet for checking the connection still alive.	30
Disconnect Time	
Specify how long the DVW series keeps the TCP session when there is no TCP activity in specified time. If the time is “0”, then the connection will remain open.	3000
TCP Port	
Specify the port number of DVW series.	3000



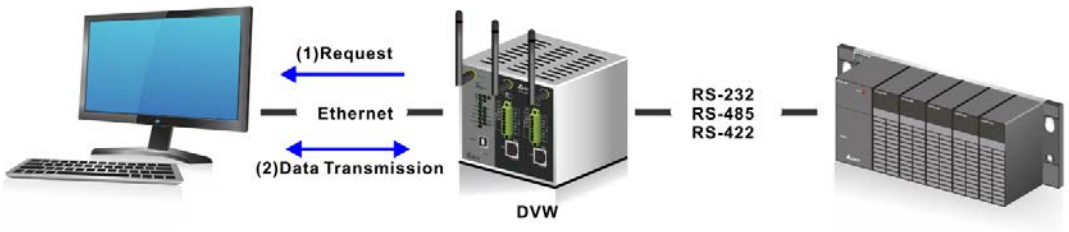
Description	Factory Default
Fixed Length	
Specify whether sends the packet with fixed length. When the receiving data length matches with the configured value, the data will be sent. **Notice:** Before you enter the value of fixed length, please remember to tick the Enable option, otherwise the Fixed Length function doesn't work.	Disabled/1024
Prefix	
Specify the Prefix Length and Prefix Process of data. **Notice:** Before you configure the settings of Prefix Length, Prefix Char and Prefix Process, please remember to tick the Enable option, otherwise the Prefix function doesn't work.	Disabled
Prefix Length	
Specify the Prefix Length for comparison process. After specify the Prefix Length, please enter the Prefix Char for process.	2

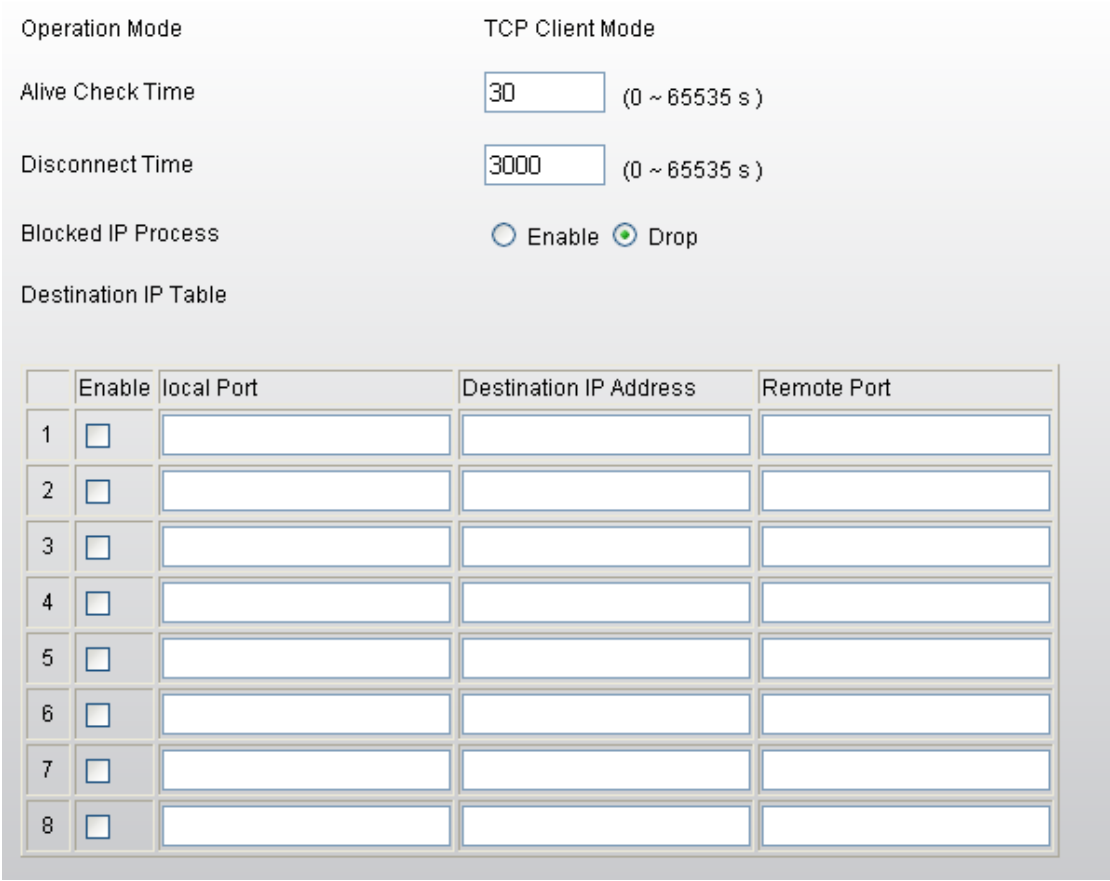
Description	Factory Default
Prefix Char (Hex.)	
Enter the Prefix Char for comparison process.	FF, FF
Prefix Process	
Specify the comparison process for the Prefix Length and Prefix Char. • **Include Prefix Char:** The data will transmit all the Prefix Char which user entered in Prefix Char (Hex.). If the Prefix Length is 1, then only first Char will be included. • **Only Prefix Char 2:** The data will transmit only Prefix Char 2 which user entered in Prefix Char (Hex.). • **Not Include:** After the comparison process is complete, the data will be transmitted without Prefix Char which the user entered in Prefix Char (Hex.).	Include prefix character
Suffix	
Specify the Suffix Length and Suffix Process of data. **Notice:** Before you configure the settings of Suffix Length, Suffix Char and Suffix Process, please remember to tick the Enable option, otherwise the Suffix function doesn't work.	Disabled
Suffix Length	
Specify the Suffix Length for comparison process. After specify the Suffix Length, please enter the Suffix Char for process.	2
Suffix Char (Hex.)	
Enter the Suffix Char for comparison process.	FF, FF
Suffix Process	
Specify the comparison process for the Suffix Length and Suffix Char. • **Include Suffix Char:** The data will transmit all the Suffix Char which user entered in Suffix Char (Hex.). If the Suffix Length is 1, then only first Suffix Char will be included. • **Only Suffix Char 1:** The data will transmit only Suffix Char 1 which user entered in Suffix Char (Hex.). • **Not Include:** After the comparison process is complete, the data will be transmitted without Suffix Char which the user entered in Suffix Char (Hex.).	Include suffix character

Description	Factory Default
Aging Time	
Specify the time for DVW series to force pack the received serial data into the same data frame. **Notice:** Before you configure the settings of Aging Time, please remember to tick the Enable option, otherwise the Aging Time doesn't be applied.	Disabled/ 1000 (ms)

3.3.1.4 TCP Client Mode

In TCP Client Mode, DVW series works as an active role. User can enter the destination IP information of the host computer or device in Destination IP Table first. Then DVW series sends a request message to the host for establish the connection first. After the connection is established, the data can be transmitted between the host and DVW series.

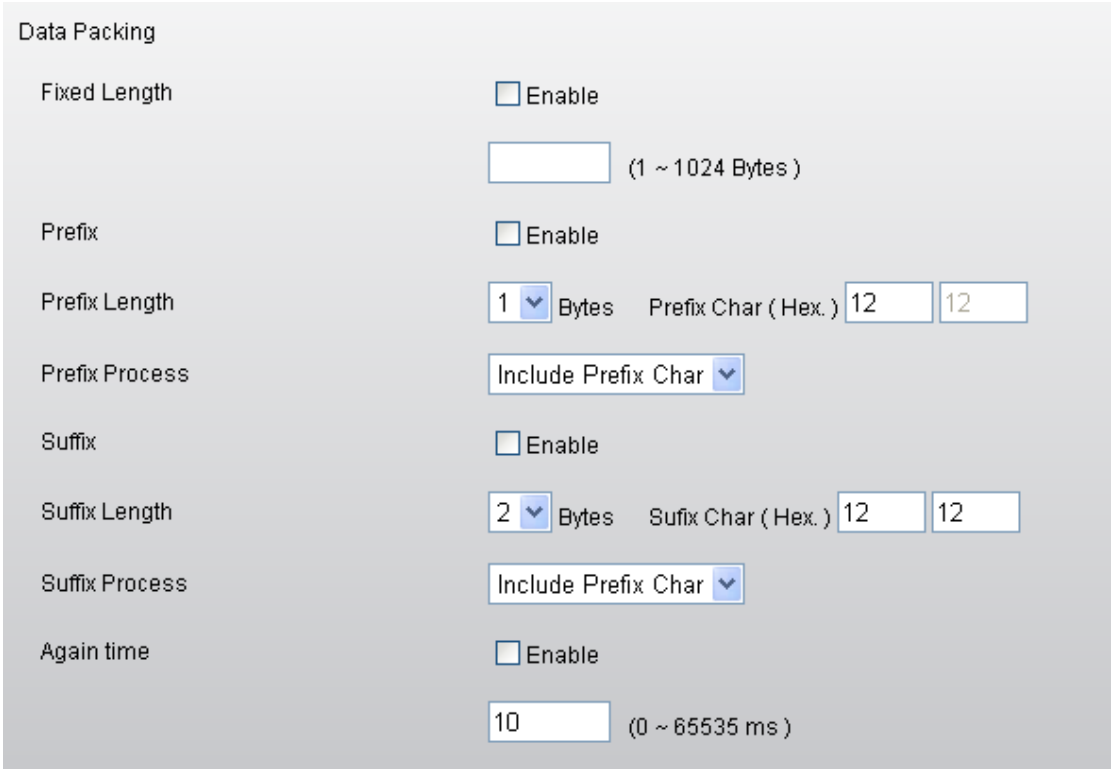




Description	Factory Default
Operation Mode	
Display the operation mode of serial port.	TCP Client Mode
Alive Check Time	
Specify how long the DVW series sends a packet for checking the connection still alive.	30
Disconnect Time	
Specify how long the DVW series keeps the TCP session when there is no TCP activity in specified time. If the time is “0”, then the connection will remain open.	3000

Destination IP Table

Description	Factory Default
Enable	
Specify whether the destination IP information is enabled.	Unticked
Local Port	
Specify the local listen port of DVW series for the specified destination device which uses to establish the connection, ranging from 1024 to 65535.	8000-8007
Destination IP Address	
Specify the IP address of the Ethernet device.	None
Remote Port	
Specify the port number of the Ethernet device, ranging from 1024 to 65535.	8000



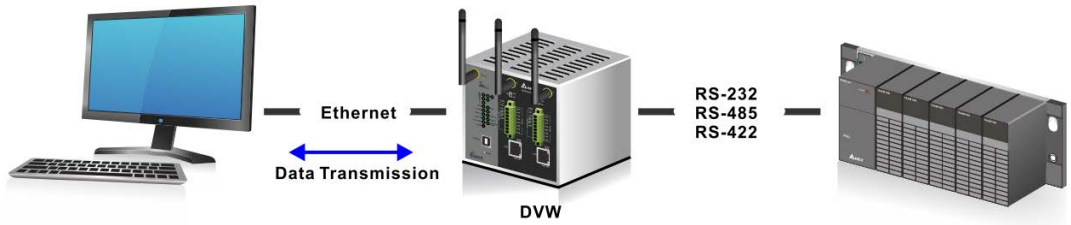
Data Packing

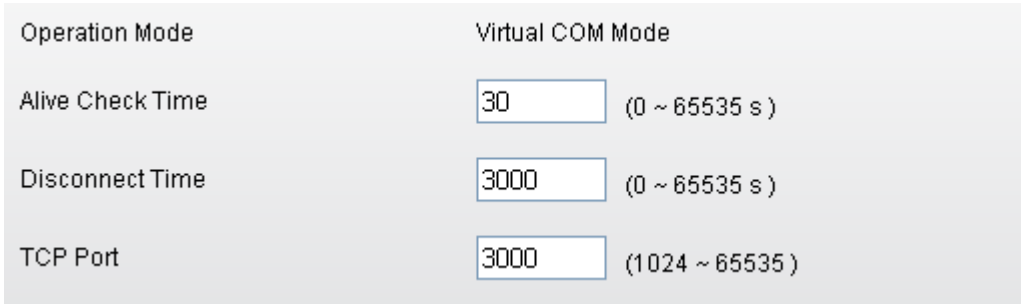
Description	Factory Default
Fixed Length	
Specify whether sends the packet with fixed length. When the receiving data length matches with the configured value, the data will be sent. **Notice:** Before you enter the value of fixed length, please remember to tick the Enable option, otherwise the Fixed Length function doesn't work.	Disabled/ 1024
Prefix	
Specify the Prefix Length and Prefix Process of data. **Notice:** Before you configure the settings of Prefix Length, Prefix Char and Prefix Process, please remember to tick the Enable option, otherwise the Prefix function doesn't work.	Disabled
Prefix Length	
Specify the Prefix Length for comparison process. After specify the Prefix Length, please enter the Prefix Char for process.	2
Prefix Char (Hex.)	
Enter the Prefix Char for comparison process.	FF, FF
Prefix Process	
Specify the comparison process for the Prefix Length and Prefix Char. • **Include Prefix Char:** The data will transmit all the Prefix Char which user entered in Prefix Char (Hex.). If the Prefix Length is 1, then only first Char will be included. • **Only Prefix Char 2:** The data will transmit only Prefix Char 2 which user entered in Prefix Char (Hex.). • **Not Include:** After the comparison process is complete, the data will be transmitted without Prefix Char which the user entered in Prefix Char (Hex.).	Include prefix character

Description	Factory Default
Suffix	
Specify the Suffix Length and Suffix Process of data. **Notice:** Before you configure the settings of Suffix Length, Suffix Char and Suffix Process, please remember to tick the Enable option, otherwise the Suffix function doesn't work.	Disabled
Suffix Length	
Specify the Suffix Length for comparison process. After specify the Suffix Length, please enter the Suffix Char for process.	2
Suffix Char (Hex.)	
Enter the Suffix Char for comparison process.	FF, FF
Suffix Process	
Specify the comparison process for the Suffix Length and Suffix Char. • **Include Suffix Char:** The data will transmit all the Suffix Char which user entered in Suffix Char (Hex.). If the Suffix Length is 1, then only first Suffix Char will be included. • **Only Suffix Char 1:** The data will transmit only Suffix Char 1 which user entered in Suffix Char (Hex.). • **Not Include:** After the comparison process is complete, the data will be transmitted without Suffix Char which the user entered in Suffix Char (Hex.).	Include suffix character
Aging Time	
Specify the time for DVW series to force pack the received serial data into the same data frame. **Notice:** Before you configure the settings of Aging Time, please remember to tick the Enable option, otherwise the Aging Time doesn't be applied.	Disabled/ 1000 (ms)

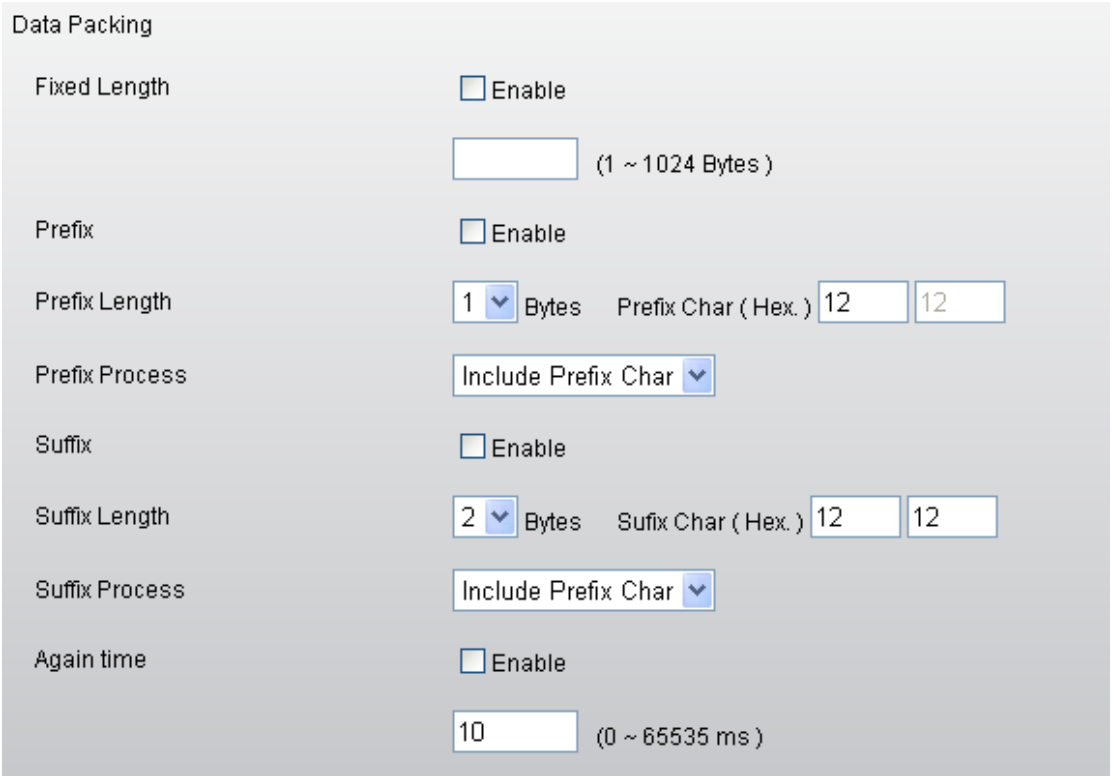
3.3.1.5 Virtual COM Mode

In Virtual COM mode, DVW series can establish a network connection between the host computer and serial device. So the DVW series maps the IP address with port number to the serial port on itself. When the application on host computer doesn't provide serial interface to connect with serial device, then Virtual COM mode can solve this problem and establish a Virtual COM connection on Ethernet interface.





Description	Factory Default
Operation Mode	
Display the operation mode of serial port.	Virtual COM Mode
Alive Check Time	
Specify how long the DVW series sends a packet for checking the connection still alive.	30
Disconnect Time	
Specify how long the DVW series keeps the TCP session when there is no TCP activity in specified time. If the time is "0", then the connection will remain open.	3000
TCP Port	
Specify the port number of DVW series.	3000



Data Packing

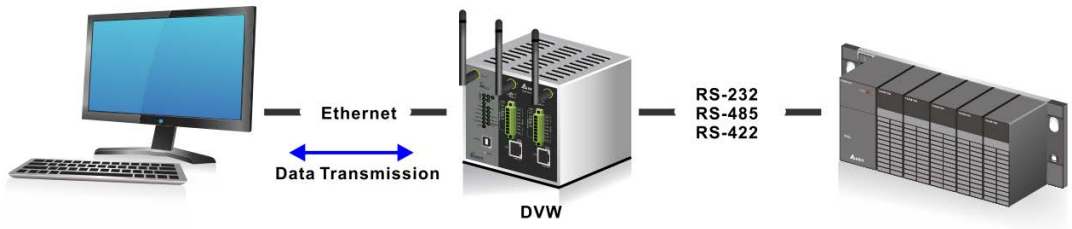
Description	Factory Default
Fixed Length	
Specify whether sends the packet with fixed length. When the receiving data length matches with the configured value, the data will be sent. **Notice:** Before you enter the value of fixed length, please remember to tick the Enable option, otherwise the Fixed Length function doesn't work.	Disabled/ 1024
Prefix	
Specify the Prefix Length and Prefix Process of data. **Notice:** Before you configure the settings of Prefix Length, Prefix Char and Prefix Process, please remember to tick the Enable option, otherwise the Prefix function doesn't work.	Disabled

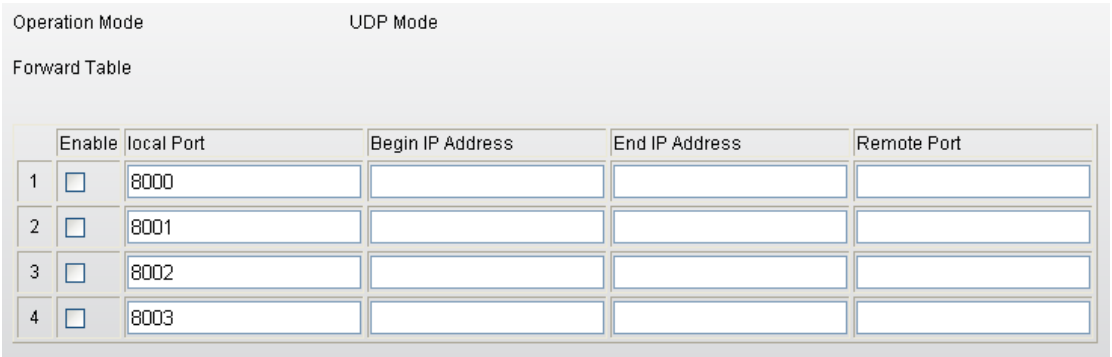
Description	Factory Default
Prefix Length	
Specify the Prefix Length for comparison process. After specify the Prefix Length, please enter the Prefix Char for process.	2
Prefix Char (Hex.)	
Enter the Prefix Char for comparison process.	FF, FF
Prefix Process	
Specify the comparison process for the Prefix Length and Prefix Char. • **Include Prefix Char:** The data will transmit all the Prefix Char which user entered in Prefix Char (Hex.). If the Prefix Length is 1, then only first Char will be included. • **Only Prefix Char 2:** The data will transmit only Prefix Char 2 which user entered in Prefix Char (Hex.). • **Not Include:** After the comparison process is complete, the data will be transmitted without Prefix Char which the user entered in Prefix Char (Hex.).	Include prefix character
Suffix	
Specify the Suffix Length and Suffix Process of data. **Notice:** Before you configure the settings of Suffix Length, Suffix Char and Suffix Process, please remember to tick the Enable option, otherwise the Suffix function doesn't work.	Disabled
Suffix Length	
Specify the Suffix Length for comparison process. After specify the Suffix Length, please enter the Suffix Char for process.	2
Suffix Char (Hex.)	
Enter the Suffix Char for comparison process.	FF, FF
Suffix Process	
Specify the comparison process for the Suffix Length and Suffix Char. • **Include Suffix Char:** The data will transmit all the Suffix Char which user entered in Suffix Char (Hex.). If the Suffix Length is 1, then only first Suffix Char will be included.	Include suffix character

Description	Factory Default
• **Only Suffix Char 1:** The data will transmit only Suffix Char 1 which user entered in Suffix Char (Hex.). • **Not Include:** After the comparison process is complete, the data will be transmitted without Suffix Char which the user entered in Suffix Char (Hex.).	
Aging Time	
Specify the time for DVW series to force pack the received serial data into the same data frame. **Notice:** Before you configure the settings of Aging Time, please remember to tick the Enable option, otherwise the Aging Time doesn't be applied.	Disabled/ 1000 (ms)

3.3.1.6 UDP Mode

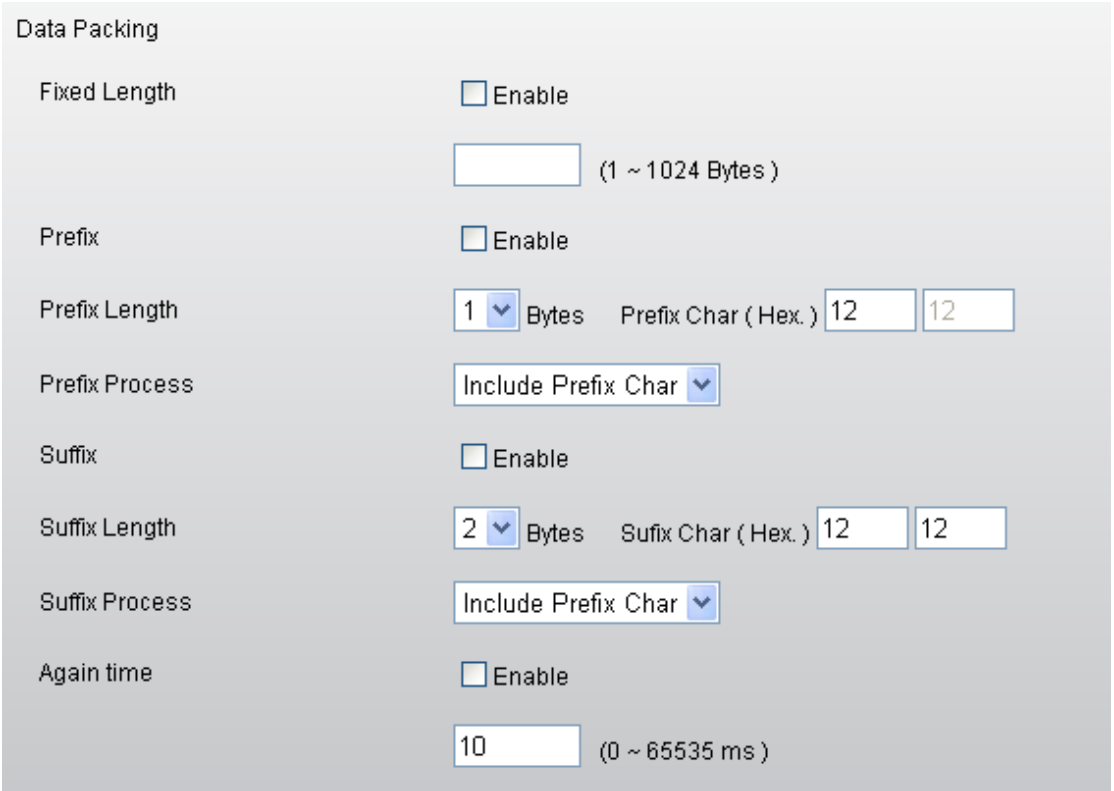
Compare with TCP communication, UDP communication doesn't need request message before the session has been established. So after user configure the remote IP address and port information, the device will start to transmit the data. You can use unicast or multicast way to transmit data between the host computer and serial device.





Forward Table

Description	Factory Default
Enable	
Specify whether the forward information is enabled.	Unticked
Local Port	
Specify the local listen port of DVW series for the device which uses to establish the connection.	8000-8003
Begin IP Address	
Specify the beginning of destination IP address.	None
End IP Address	
Specify the end of destination IP address.	None
Remote Port	
Specify the port number of the Ethernet device.	None



Data Packing

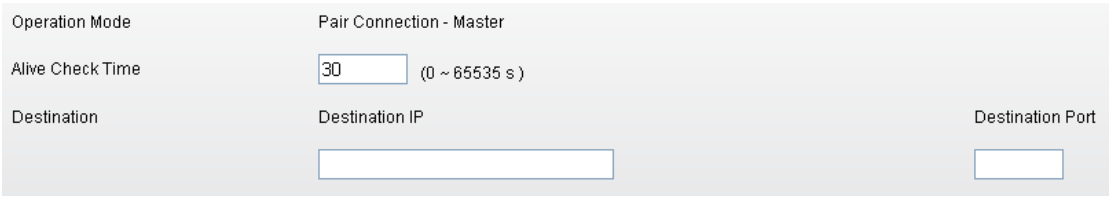
Description	Factory Default
Fixed Length	
Specify whether sends the packet with fixed length. When the receiving data length matches with the configured value, the data will be sent. **Notice:** Before you enter the value of fixed length, please remember to tick the Enable option, otherwise the Fixed Length function doesn't work.	Disabled/ 1024
Prefix	
Specify the Prefix Length and Prefix Process of data. **Notice:** Before you configure the settings of Prefix Length, Prefix Char and Prefix Process, please remember to tick the Enable option, otherwise the Prefix function doesn't work.	Disabled
Prefix Length	
Specify the Prefix Length for comparison process. After specify the Prefix Length, please enter the Prefix Char for process.	2
Prefix Char (Hex.)	
Enter the Prefix Char for comparison process.	FF, FF
Prefix Process	
Specify the comparison process for the Prefix Length and Prefix Char. • **Include Prefix Char:** The data will transmit all the Prefix Char which user entered in Prefix Char (Hex.). If the Prefix Length is 1, then only first Char will be included. • **Only Prefix Char 2:** The data will transmit only Prefix Char 2 which user entered in Prefix Char (Hex.). • **Not Include:** After the comparison process is complete, the data will be transmitted without Prefix Char which the user entered in Prefix Char (Hex.).	Include prefix character

Description	Factory Default
Suffix	
Specify the Suffix Length and Suffix Process of data.  **Notice:** Before you configure the settings of Suffix Length, Suffix Char and Suffix Process, please remember to tick the Enable option, otherwise the Suffix function doesn't work.	Disabled
Suffix Length	
Specify the Suffix Length for comparison process. After specify the Suffix Length, please enter the Suffix Char for process.	2
Suffix Char (Hex.)	
Enter the Suffix Char for comparison process.	FF, FF
Suffix Process	
Specify the comparison process for the Suffix Length and Suffix Char. • **Include Suffix Char:** The data will transmit all the Suffix Char which user entered in Suffix Char (Hex.). If the Suffix Length is 1, then only first Suffix Char will be included. • **Only Suffix Char 1:** The data will transmit only Suffix Char 1 which user entered in Suffix Char (Hex.). • **Not Include:** After the comparison process is complete, the data will be transmitted without Suffix Char which the user entered in Suffix Char (Hex.).	Include suffix character
Aging Time	
Specify the time for DVW series to force pack the received serial data into the same data frame.  **Notice:** Before you configure the settings of Aging Time, please remember to tick the Enable option, otherwise the Aging Time doesn't be applied.	Disabled/ 1000 (ms)

3.3.1.7 Pair Connection Mode

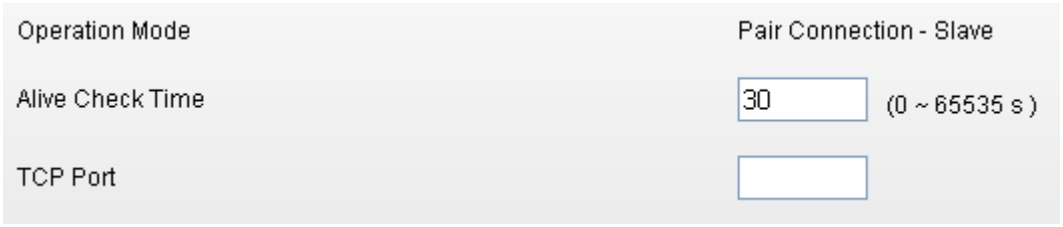
Pair Connection Master and Slave modes connect two DVW series over a network. The serial device can connect to a DVW series, and two DVW can use wired Ethernet cable or wireless way to connect each other. Then two serial devices can overcome the distance limitation of serial interface.

Pair Connection Master Mode



Description	Factory Default
Operation Mode	
Display the operation mode of serial port.	Pair Connection - Master
Alive Check Time	
Specify how long the DVW series sends a packet for checking the connection still alive.	30
Destination IP	
Specify the IP address for the destination DVW series with Pair Connection Slave mode.	None
Destination Port	
Specify the port number for the destination DVW series with Pair Connection Slave mode.	None

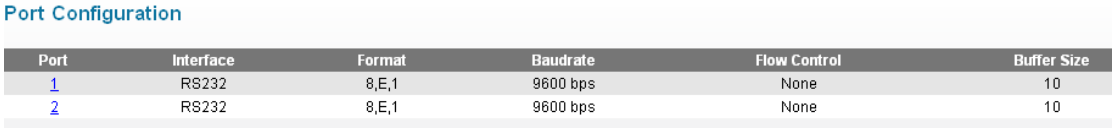
Pair Connection Slave Mode

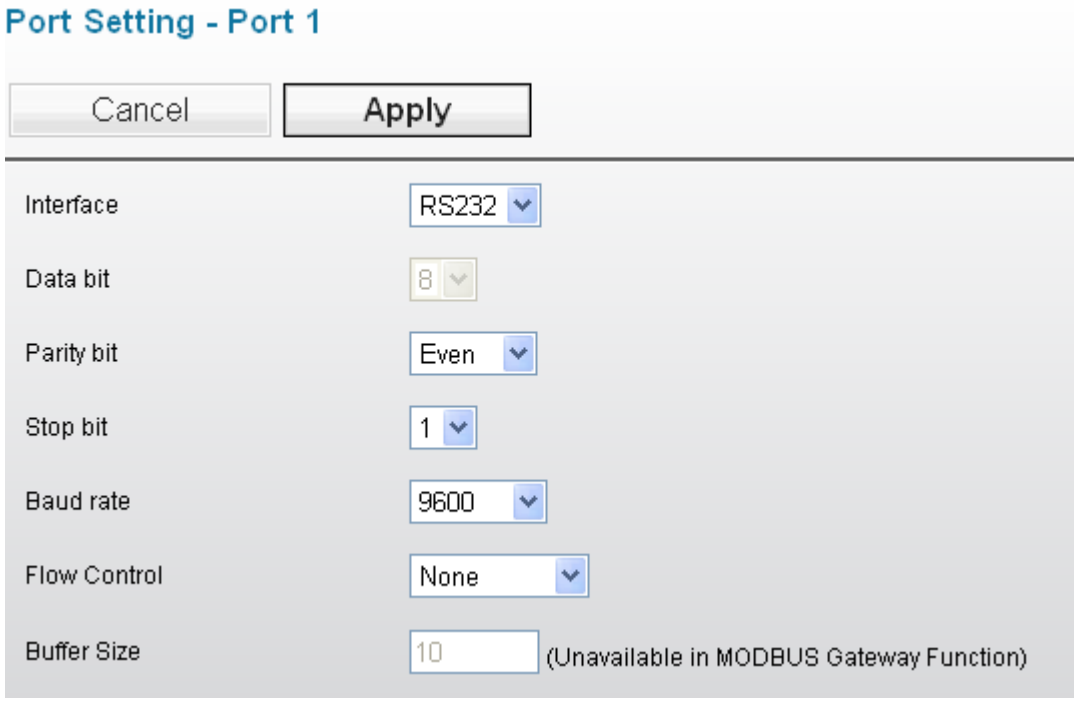


Description	Factory Default
Operation Mode	
Display the operation mode of serial port.	Pair Connection - Slave
Alive Check Time	
Specify how long the DVW series keeps the connection. If the time is “0”, then the connection will remain open.	30
TCP Port	
Specify the port number for the DVW series with Pair Connection Master mode to connect.	None

3.3.2 Port Configuration

You can view the current communication settings for each serial port in this page. If you need to configure the settings,

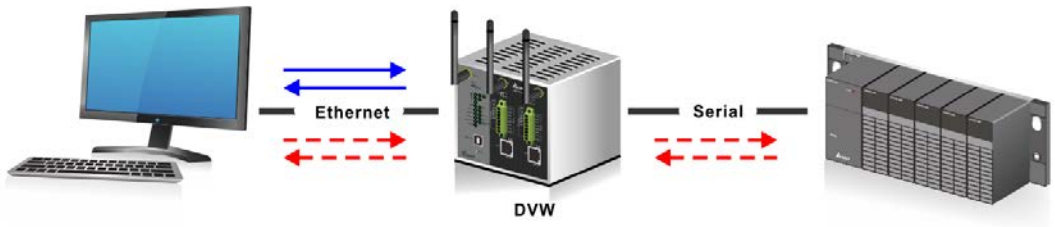




Parameter	Value
Interface	RS232, RS485, RS422
Data bit	7, 8
Parity bit	None, Even, Odd, Space, Mark
Stop bit	1, 2
Baud rate	110 to 921600 bps
Flow Control	None, RTS/CTS, XON/XOFF
Buffer Size	10 (Default Value, not available in MODBUS Gateway Funciton)

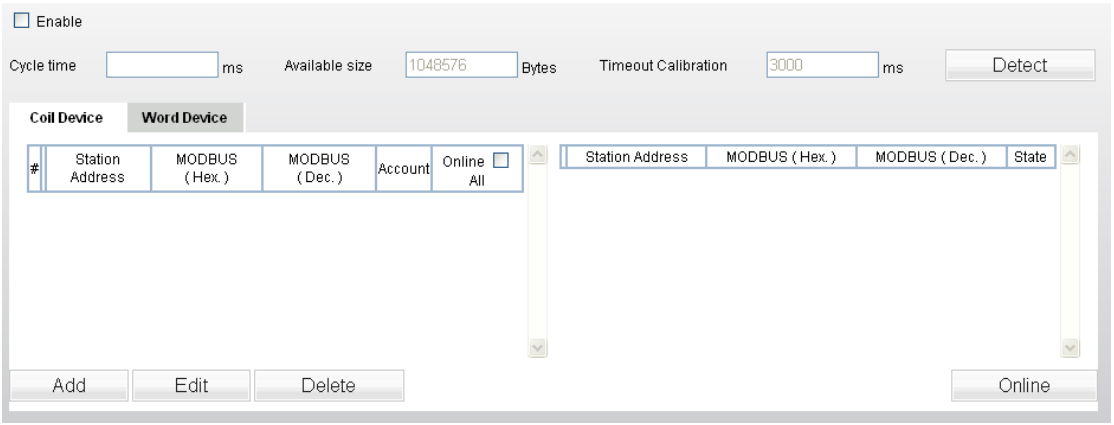
3.3.3 MODBUS Cache Table

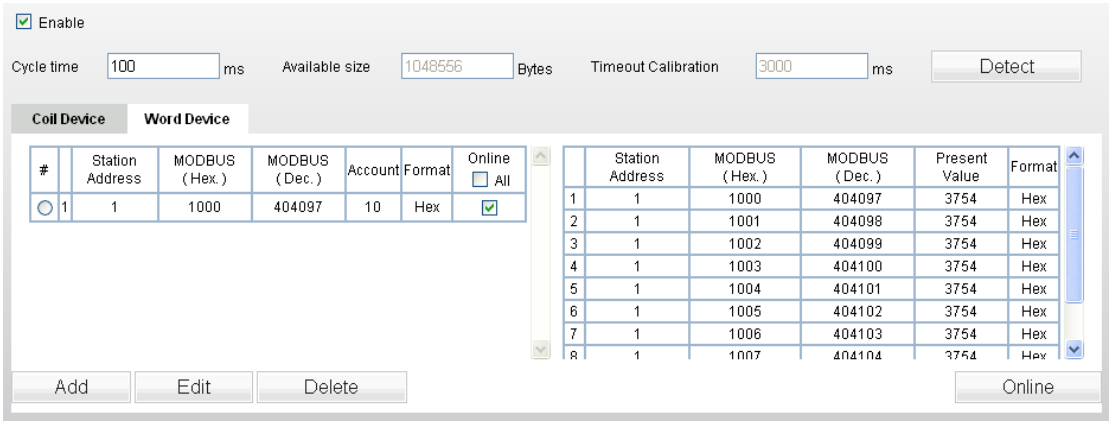
The transmit speed of Ethernet interface is faster than serial interface, so the device on Ethernet side usually need to spend much time to wait the data from serial side after they send the request message to the device on serial side. MODBUS Cache Table provide user for configure the device information (ex. Station ID, MODBUS address…etc.), and DVW can send request message for get the data from the device on serial side according to the MODBUS Cache table in advance. When the device on Ethernet side sends the request to DVW series, then DVW can response the data immediately. Because DVW series don't need to forward the request message to the device on serial side again, it already get the data in advance. So this only can be enabled when the operation mode in **MODBUS Slave mode**.



Read data in MODBUS Cache mode

Read data in Non MODBUS Cache Table mode





3

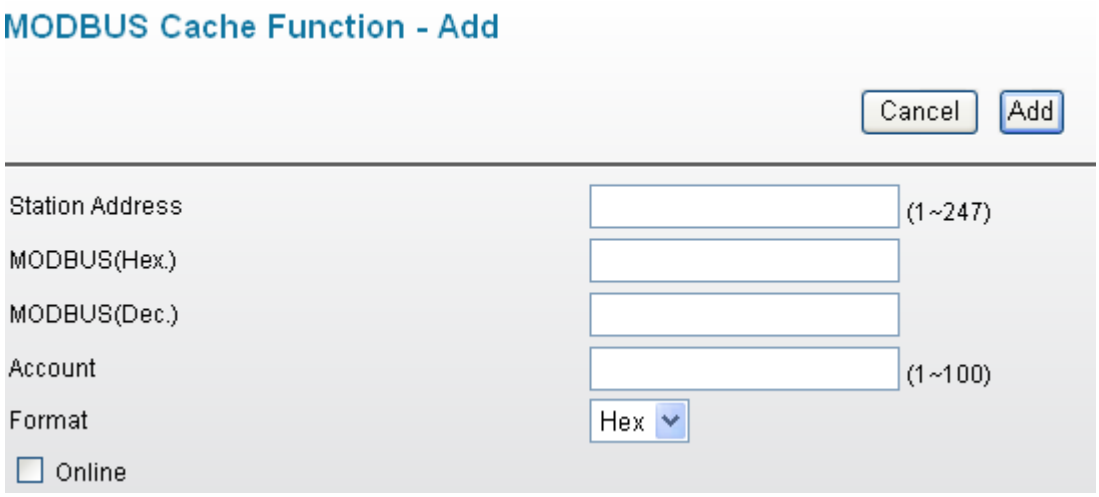
Description	Factory Default
Enable	
Specify whether the MODBUS Cache function is enabled.	Unticked
Cycle time	
Specify the time of sending request message with serial devices.	10
Available size	
Display the remaining size for the data can be monitored. 1MB size can include 100,000 data.	1048576 (fixed)
Timeout Calibration	
Display the adjusted time of Response Timeout. When user click the Detect button, DVW series will communicate with the device according to the MODBUS Cache table	3000 (fixed)

Coil Device

Item	Description
Station Address	The station ID of the device.
MODBUS (Hex.)	The MODBUS address in hexadecimal.
MODBUS (Dec.)	The MODBUS address in decimal.
State	The value of the MODBUS address.

Word Device

Item	Description
Station Address	The station ID of the device.
MODBUS (Hex.)	The MODBUS address in hexadecimal.
MODBUS (Dec.)	The MODBUS address in decimal.
Present Value	The present value of the MODBUS address.
Format	The format of the value as Hex, Dec or Bin.



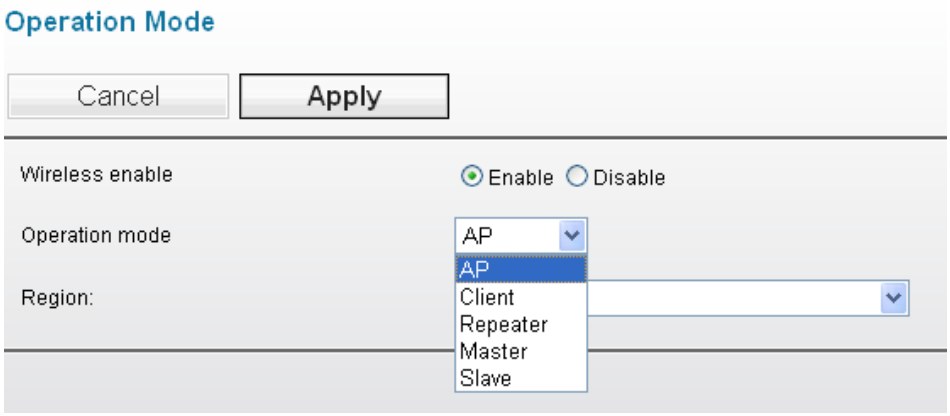
Description	Factory Default
Station Address	
The station ID of the device.	None
MODBUS (Hex.)	
The MODBUS address in hexadecimal.	None
MODBUS (Dec.)	
The MODBUS address in decimal.	None
Account	
The amount of MODBUS data can be monitored.	None
Format	
Specify the format of the value as Hex, or Dec.	Hex
Online	
Specify whether the data display in MODBUS monitored table.	Unticked

3.4 WLAN Manager

The device should support AP mode, Client mode, Repeater mode and WDS (Master/Slave) mode.

3.4.1 Operation Mode

Delta DVW series provides 5 operation modes for you to configure in different network environment. Before you establish your wireless network, you must specify an operation mode on DVW series.



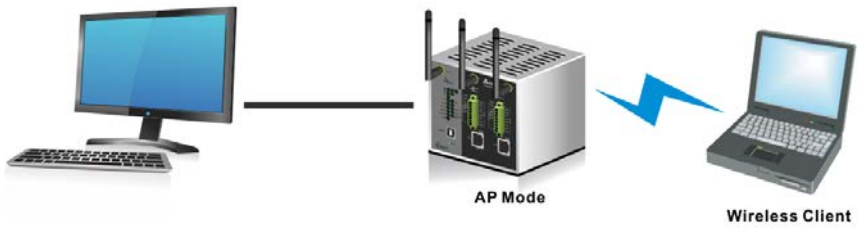
Description	Factory Default
Wireless enable	
Specify whether the wireless is enabled or not. • **Enable:** Wireless function can work. • **Disable:** Wireless function can't work.	Disabled
Operation mode	
Specify the wireless operation mode: • **AP:** Specify DVW series work as AP mode. • **Client:** Specify DVW series work as Client mode. • **Repeater:** Specify DVW series work as Repeater mode. • **Master:** Specify DVW series work as a WDS Master mode. • **Slave:** Specify DVW series work as a WDS Slave mode.	AP
Region	
Specify the country where the device locates.	English Mode: Europe Chinese Mode: Asia

Notice:

If you click Cancel button, GUI will revoke all your input and revoke to previous settings, then return to "Basic Wireless Configuration" page.

3.4.1.1 AP Mode

When DVW series configures as AP (Access Point) mode, it can provide the connectivity for wireless client. Please refer to section 3.4.2.1 Basic Wireless Configuration – AP Mode for more information.

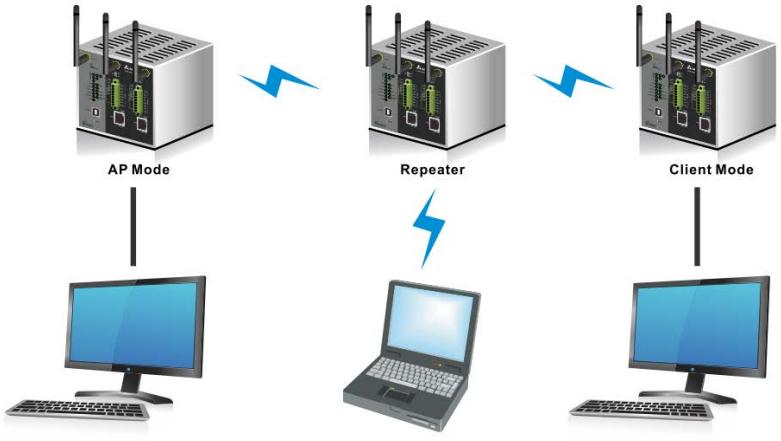


3.4.1.2 Client Mode

When DVW series configures as Client mode, it can provides LAN-to-WLAN connection type. If a client doesn't equipped wireless card, it can use Ethernet cable connect to DVW series which be configured as Client mode, and have a connection with another AP. Please refer to section 3.4.2.2 Basic Wireless Configuration – Client Mode for more information.

3.4.1.3 Repeater Mode

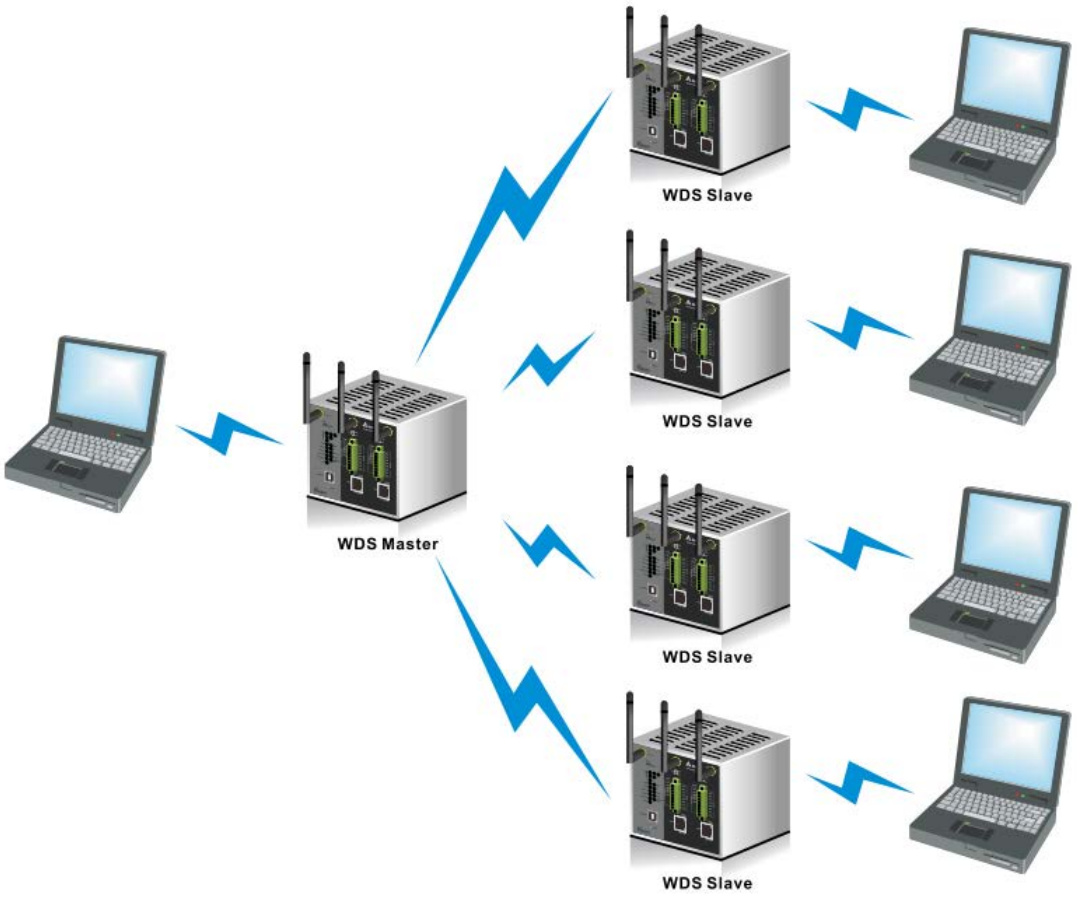
When DVW series configures as Repeater mode, it can extend the wireless distance between two wireless devices. It supports AP mode and Client mode concurrently. You can set more than one repeater between two wireless devices, but it will affect the throughput. Please refer to section 3.4.2.3 Basic Wireless Configuration – Repeater Mode for more information.



3.4.1.4 WDS Master and Slave Mode

When the DVW series configures as WDS Master mode, it will be enabled as a Base Station. User can add the MAC address of the repeaters. Up to 4 repeaters can be added. Please refer to section 3.4.2.4 Basic Wireless Configuration – WDS Master Mode for more information.

When the DVW series configures as WDS Slave mode, it will be enabled as a Repeater. User can add the MAC address of the base station. Please refer to section 3.4.2.5 Basic Wireless Configuration – WDS Slave Mode for more information.



3.4.1.5 Regions

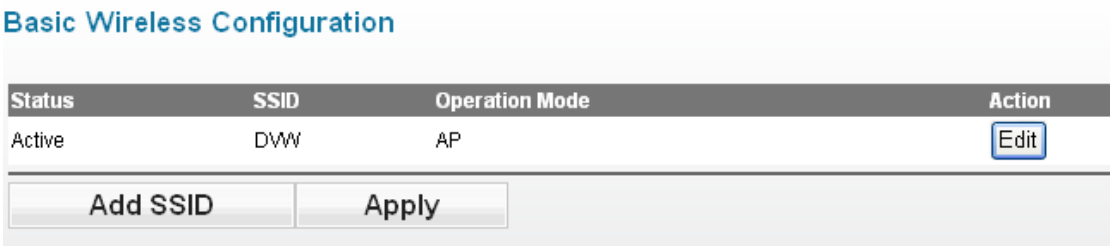
There are different regulations for wireless channels in different regions. Countries apply their own regulations to the allowable channels, allowed user and maximum power levels within these frequency ranges. The DVW series supports the wireless channels for the following countries, Africa, Asia, Australia, Canada, China, Europe, India, Israel, Japan, Korea, Malaysia, Mexico, Middle East (Algeria, Syria, Yemen, Iran, Lebanon, Qatar, Turkey, Egypt, Tunisia, Kuwait, Saudi Arabia, United Arab Emirates), Russia, Singapore, South America, Taiwan, and the United States.

3.4.2 WLAN

There are different wireless configurations for various operation modes, including AP mode, Client mode, Repeater mode, WDS Master mode, and WDS slave mode.

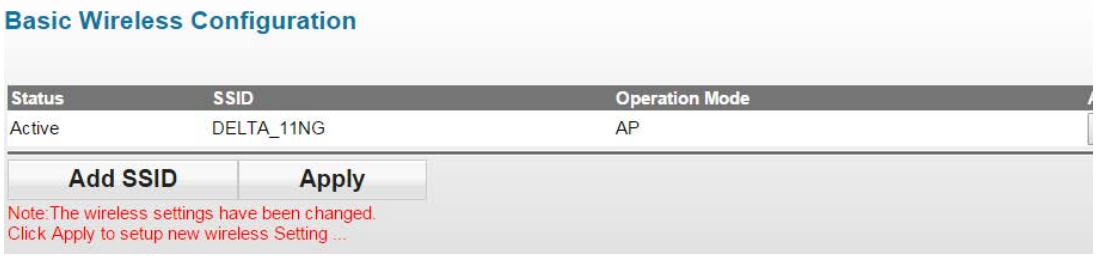
3.4.2.1 Basic Wireless Configuration – AP Mode

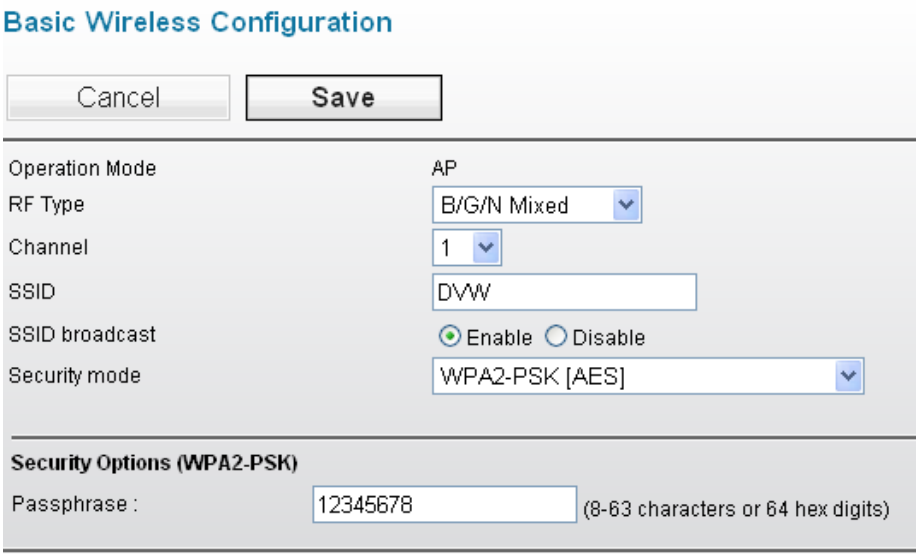
After you specify the Operation Mode, please add a SSID in Basic Wireless Configuration page. And click Edit button to configure the wireless settings.



Notice:

Please remember to click the "Apply" button to have the new wireless settings applied. If there is any change on the wireless settings, a reminder will show up under the "Add-SSID" button.





Description	Factory Default
Operation Mode	
Display the current operation mode.	AP mode
RF Type	
2.4GHz • B: only support IEEE 802.11b mode • G: only support IEEE 802.11g mode • B/G Mixed: support IEEE 802.11b/g mixed mode • G/N Mixed: support IEEE 802.11g/n mixed mode, but not IEEE 802.11b mode • B/G/N Mixed: support IEEE 802.11b/g/n mixed mode • N Only (2.4GHz): only support IEEE 802.11n mode **5GHz** • A : only support IEEE 802.11a mode • A/N Mixed: IEEE 802.11a/n mixed mode • N Only (5GHz): only support IEEE 802.11n mode	None
Channel	
2.4GHz • Canada, Mexico, Taiwan, the United States: 1-11 • The rest of the above-mentioned countries: 1~13 **5GHz** • Asia, Australia, Canada, India, Israel, Malaysia, Mexico, Singapore, South America, the United States: ➢ A/N mixed mode: 36, 40, 44, 48, 149, 153, 157, 161, 165 ➢ 5GHz mode: 36, 40, 44, 48, 149, 153, 157, 161 • Korea: 36, 40, 44, 48, 149, 153, 157, 161 • China, Middle East (Iran, Lebanon, Qatar): ➢ A/N mixed mode: 149, 153, 157, 161, 165 ➢ 5GHZ mode: 149, 153, 157, 161 • Middle East (Saudi Arabia): A/N mixed mode: 149, 153, 157, 161, 165 • Taiwan: ➢ A/N mixed mode: 56, 60, 64, 149, 153, 157, 161, 165 ➢ 5GHz mode: 60, 64, 149, 153, 157, 161	None

Description	Factory Default
• For the rest of the above mentioned countries: 36, 40, 44, 48	
SSID	
Specify the name of wireless device. It is not case sensitive. You can input **1 to 32 characters** for SSID and space is also allowed.	DELTA_11NG
SSID broadcast	
Specify whether the SSID broadcast is enabled. • **Enable:** SSID can be broadcast. • **Disable:** SSID can't be broadcast.	Enabled
Security mode	
Please refer to section 3.4.2.6 **Wireless Security Settings** section.	None

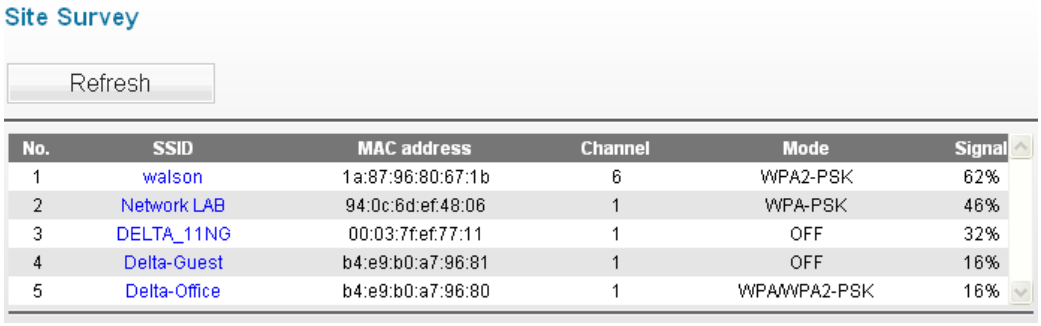
Notice:

Before connecting the wireless device to the DVW series in the AP mode, please check if the network environment is with the DHCP-Server. If not, please set the IP configurations of the DVW series to DHCP-Server or manually set the IP address of the wireless device to the same network segment of the DVW series. Otherwise, DVW series may not be able to connect to the wireless device.

3.4.2.2 Basic Wireless Configuration – Client Mode

If you configure the Operation Mode to Client Mode, the Site Survey button will be shown on the Basic Wireless Configuration page. Click the "Site Survey" button and then a "Wireless Site Survey Table" will appear. It will list all available access points nearby. Select one access point in the table for the DVW series to connect. This allows two physically isolated networks to communicate with each other.

- If you configure the Wireless to **Disable**, the **Site Survey** button will be grayed out.



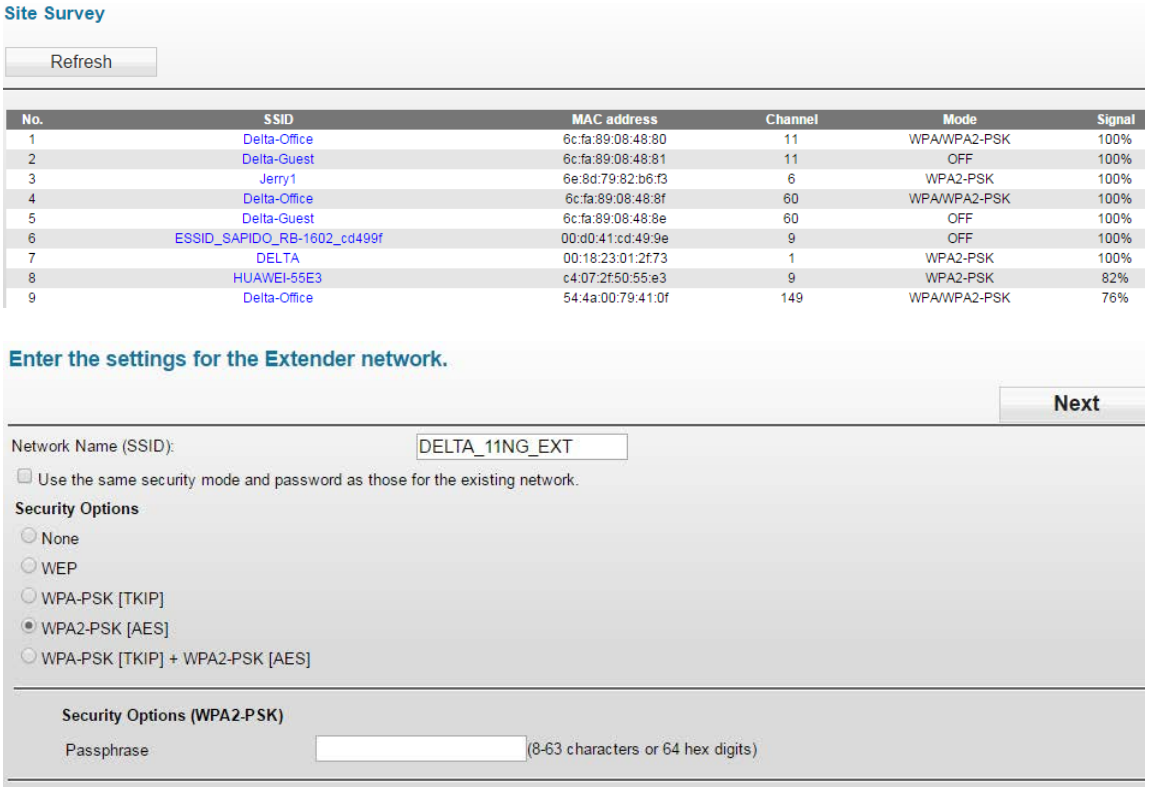
Notice:

- The client mode LED and the status LED will be ON when the device is in the client mode.
- The RF type and the channel will be grayed out in the client mode. After mapping, the RF type, channel, and security mode will be synchronized with the settings of the AP end.
- Before connecting the wireless device to the DVW series in the Client mode, please check if the network environment is with the DHCP-Server. If not, please set the IP configurations of the DVW series to DHCP-Server or manually set the IP address of the wireless device to the same network segment of the DVW series. Otherwise, DVW series may not be able to connect to the wireless device.
- While setting the device to the client mode, it is suggested to use Delta DVW series for both AP end and the client end to minimize compatibility issues and ensure best performance.

3.4.2.3 Basic Wireless Configuration – Repeater Mode

If you configure the Operation Mode to Repeater Mode, the Site Survey button will be shown on the Basic Wireless Configuration page. Click the “Site Survey” button and then a “Wireless Site Survey Table” will appear. It will list all available access points nearby. Select one access point in the table for the DVW series to connect. This allows two physically isolated networks to communicate with each other.

- If you configure the Wireless to **Disable**, the **Site Survey** button will be grayed out.



Notice:

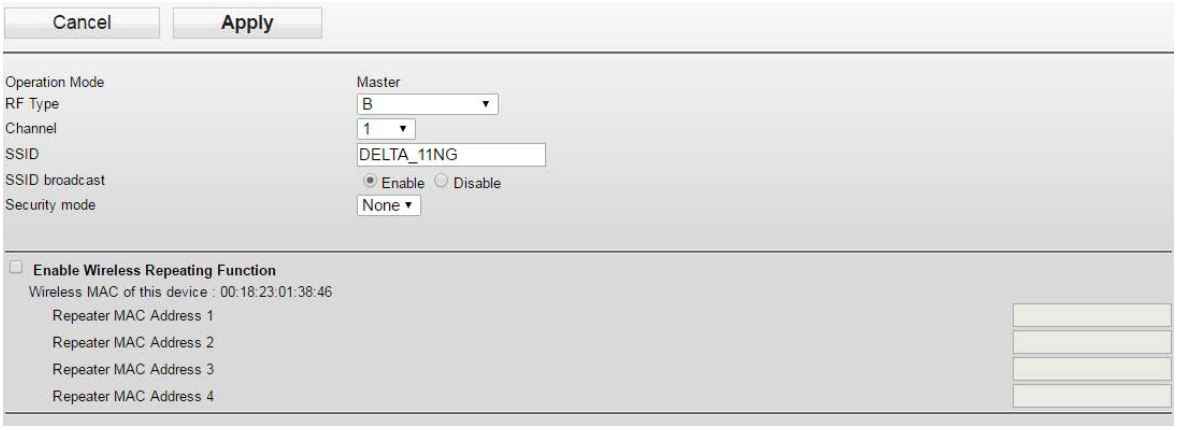
- The Repeater mode LED and the status LED will be ON when the device is in the client mode.
- The RF type and the channel will be grayed out in the client mode. After mapping, the RF type, channel, and security mode will be synchronized with the settings of the AP end.
- Before connecting the wireless device to the DVW series in the Repeater mode, please check if the network environment is with the DHCP-Server. If not, please set the IP configurations of the DVW series to DHCP-Server or manually set the IP address of the wireless device to the same network segment of the DVW series. Otherwise, DVW series may not be able to connect to the wireless device.
- The bandwidth will be decreased by 50% whenever a repeater end is created.
- While setting the device to the client mode, it is suggested to use Delta DVW series for AP end, repeater end and the client end to minimize compatibility issues and ensure best performance.

Description	Factory Default
Network Name (SSID)	
SSID of the repeater end can be set differently as the AP end	None
Security Mode	
• **Select the Use the same security mode and password as those for the existing network:** the security mode of the repeater will be the same as the security mode of the AP end.	None

Description	Factory Default
• **Select the specific security (not the same as the security mode of the AP end); selections are:** None, WEP, WPA-PSK[TKIP], WPA2-PSK[AES], and WPA-PSK[TKIP]+WPA2-PSK[AES	

3.4.2.4 Basic Wireless Configuration – Master Mode

If you configure the Operation Mode to Master Mode, select the “Enable Wireless Repeater Function” and input the MAC address 1~4 and then click apply.



Description	Factory Default
Operation Mode	
Display the current operation mode.	Master mode
RF Type	
2.4GHz • B: only support IEEE 802.11b mode • G: only support IEEE 802.11g mode • B/G Mixed: support IEEE 802.11b/g mixed mode • G/N Mixed: support IEEE 802.11g/n mixed mode, but not IEEE 802.11b mode • B/G/N Mixed: support IEEE 802.11b/g/n mixed mode • N Only (2.4GHz): only support IEEE 802.11n mode **5GHz** • A : only support IEEE 802.11a mode • A/N Mixed: IEEE 802.11a/n mixed mode • N Only (5GHz): only support IEEE 802.11n mode	None

Description	Factory Default
Channel	
2.4GHz • Canada, Mexico, Taiwan, the United States: 1-11 • The rest of the above-mentioned countries: 1~13 **5GHz** • Asia, Australia, Canada, India, Israel, Malaysia, Mexico, Singapore, South America, the United States: ➢ A/N mixed mode: 36, 40, 44, 48, 149, 153, 157, 161, 165 ➢ 5GHz mode: 36, 40, 44, 48, 149, 153, 157, 161 • Korea: 36, 40, 44, 48, 149, 153, 157, 161 • China, Middle East (Iran, Lebanon, Qatar): ➢ A/N mixed mode: 149, 153, 157, 161, 165 ➢ 5GHZ mode: 149, 153, 157, 161 • Middle East (Saudi Arabia): A/N mixed mode: 149, 153, 157, 161, 165 • Taiwan: ➢ A/N mixed mode: 56, 60, 64, 149, 153, 157, 161, 165 ➢ 5GHz mode: 60, 64, 149, 153, 157, 161 • For the rest of the above mentioned countries: 36, 40, 44, 48	None
SSID	
Specify the name of wireless device. It is not case sensitive. You can input **1 to 32 characters** for SSID and space is also allowed.	DELTA_11NG
SSID broadcast	
Specify whether the SSID broadcast is enabled. • **Enable:** SSID can be broadcast. • **Disable:** SSID can't be broadcast.	Enabled
Security mode	
• None • WEP	None
Enable Wireless Repeater Function	
Ticked: enable wireless repeater function to have the slave end connected Unticked: disable wireless repeater function to have the security mode the same as the security mode of the AP mode.	Unticked

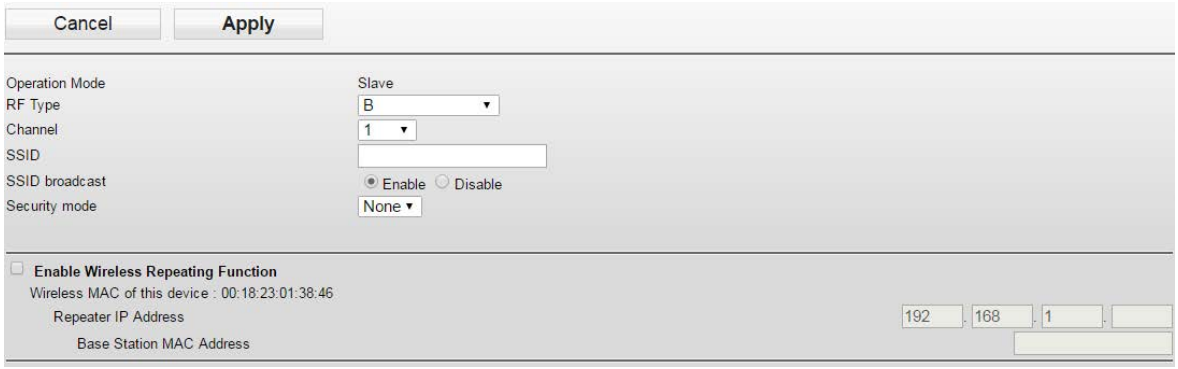
Description	Factory Default
Wireless MAC of this device	
Display the MAC address of the DVW series	
Repeater MAC Address 1~4	
Up to 4 repeater MAC addresses of the devices in the slave mode can be set. 00:1B:2F:0D:AA:B0 或 001B2F0DAAB0	None

Notice:

Once the master end is disconnected, the connected slave end will also be disconnected.

3.4.2.5 Basic Wireless Configuration – Slave Mode

If you configure the Operation Mode to Slave Mode, you will need to set the options of RF type, channel, and SSID to be the same as the settings of the Master mode and select the “Enable Wireless Repeater Function”. After that input the IP address (different from the Master mode’s IP address) and input the MAC address of the Master end and then click apply.



Description	Factory Default
Operation Mode	
Display the current operation mode.	Slave mode
RF Type	
2.4GHz • B: only support IEEE 802.11b mode • G: only support IEEE 802.11g mode • B/G Mixed: support IEEE 802.11b/g mixed mode • G/N Mixed: support IEEE 802.11g/n mixed mode, but not IEEE 802.11b mode • B/G/N Mixed: support IEEE 802.11b/g/n mixed mode	None

Description	Factory Default
• N Only (2.4GHz): only support IEEE 802.11n mode **5GHz** • A : only support IEEE 802.11a mode • A/N Mixed: IEEE 802.11a/n mixed mode • N Only (5GHz): only support IEEE 802.11n mode	
Channel	
2.4GHz • Canada, Mexico, Taiwan, the United States: 1-11 • The rest of the above-mentioned countries: 1~13 **5GHz** • Asia, Australia, Canada, India, Israel, Malaysia, Mexico, Singapore, South America, the United States: ➢ A/N mixed mode: 36, 40, 44, 48, 149, 153, 157, 161, 165 ➢ 5GHz mode: 36, 40, 44, 48, 149, 153, 157, 161 • Korea: 36, 40, 44, 48, 149, 153, 157, 161 • China, Middle East (Iran, Lebanon, Qatar): ➢ A/N mixed mode: 149, 153, 157, 161, 165 ➢ 5GHZ mode: 149, 153, 157, 161 • Middle East (Saudi Arabia): A/N mixed mode: 149, 153, 157, 161, 165 • Taiwan: ➢ A/N mixed mode: 56, 60, 64, 149, 153, 157, 161, 165 ➢ 5GHz mode: 60, 64, 149, 153, 157, 161 • For the rest of the above mentioned countries: 36, 40, 44, 48	None
SSID	
Specify the name of wireless device. It is not case sensitive. You can input **1 to 32 characters** for SSID and space is also allowed.	None
SSID broadcast	
Specify whether the SSID broadcast is enabled. • **Enable:** SSID can be broadcast. • **Disable:** SSID can't be broadcast.	Enabled
Security mode	
• None	None

Description	Factory Default
• WEP	
Wireless MAC of this device	
Display the MAC address of the DVW series	MAC address of the DVW series
Repeater IP address	
Input the repeater IP address (different from the Master mode's IP address)	192.168.1._
Base Station MAC Address	
Enter the MAC address of base station.	None

3.4.2.6 Basic Wireless Configuration – Security Mode

Wireless Security Settings

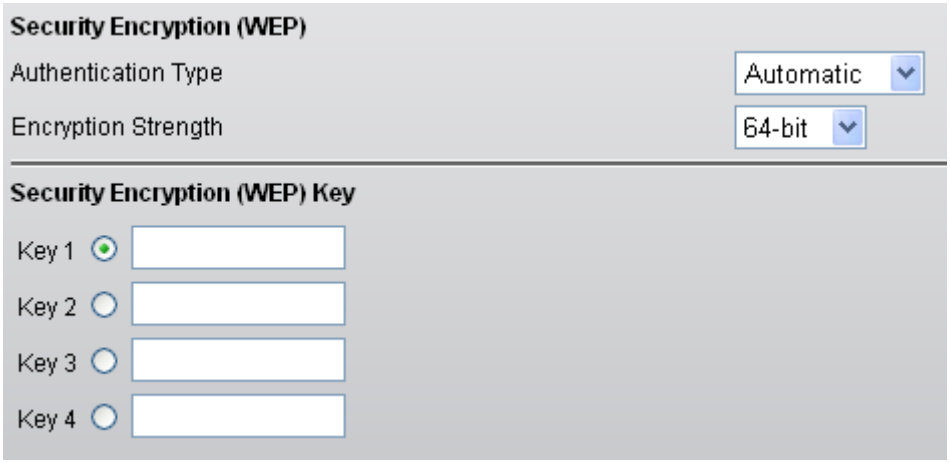
DVW series provides four standard security modes: **None**, **WEP**, **WPA**, and **WPA2**. You also can specify personal or enterprise version of WPA/WPA2 according to your requirement.

None

Any client can connect to DVW series without any security if you don't specify wireless security on DVW. So we suggest you do not set security mode to None.

WEP

There are 2 types of Encryption Strength, 64bits and 128 bits, are provided. When stronger encryption strength is selected, the performance of wireless transmission will be affected. And there are 2 formats, ASCII and HEX, for coding in the WEP. When ASCII is selected, this format allows you to use numbers and alphabets in coding. However, while HEX is selected, this format only allows you to use number 0~9 and alphabets A~E.



Description	Factory Default
Authentication Type	
• **Automatic:** Specify the authentication type as Automatic, so the wireless client can use no matter “open system” or “shared key” to pass the authentication. • **Shared key:** Specify the authentication type as Shared key.	Automatic
Encryption Strength	
• **64-bit:** Allows enter 10 hexadecimals value. • **128-bit:** Allows enter 26 hexadecimals value.	64-bit
Security Encryption (WEP) Key	
Use RC4 (Rivest Cipoher) stream cipher to achieve the security purpose and use CRC-32 to achieve the data integrity.	None

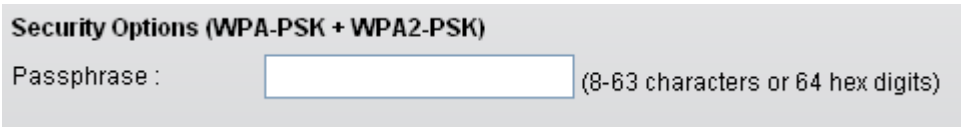
Notice:

The security mode WEP does not support 802.11n. When the WEP is selected in the Web interface, the list of wireless modes only shows the traditional modes 802.11 a/b/g.

WPA/WPA2 Personal

Wi-Fi Protected Access (WPA) and Wi-Fi Protected Access 2 (WPA2) are two security protocols and security certification programs developed by the Wi-Fi Alliance to secure wireless computer networks. Personal versions of WPA/WPA2, also known as WPA/WPA-PSK (Pre-Shared Key)

TKIP (Temporal Key Integrity Protocol) and AES (Advance Encryption System) are two encryption methods. TKIP can automatically producing a new network key every few minutes. This prevents attackers from ever gathering enough data to break into your network. AES stands for advanced encryption standard. This data encryption system, which is either a 128-bit, 192-bit or 256-bit cipher block, is considered by experts to be the most secure encryption protection option for your wireless network.



Description	Factory Default
Security Options	
• **WPA-PSK:** TKIP encryption method is enabled. • **WPA2-PSK:** AES encryption method is enabled. • **WPA-PSK+WPA2-PSK:** This setting supports both WPA-PSK and	None

Description	Factory Default
WPA2-PSK. Broadcast packets use TKIP. For unicast (point-to-point) transmissions, WPA-PSK clients use TKIP, and WPA2-PSK clients use AES.	
Passphrase	
The passphrase requires **8 to 63 ASCII characters or 64 hex digits**.	None

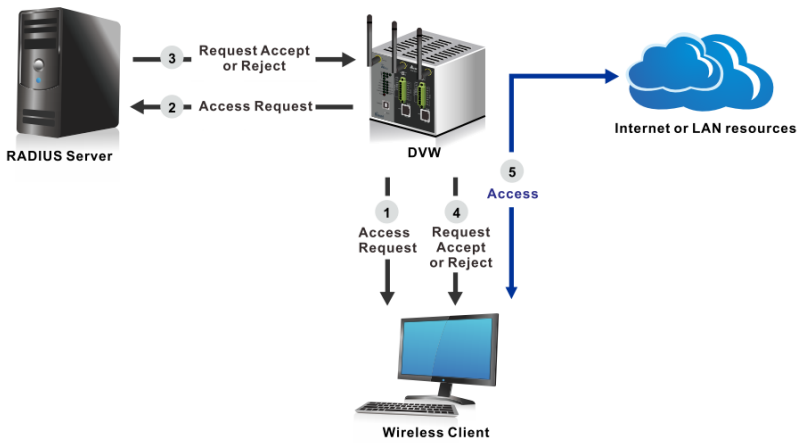
Notice:

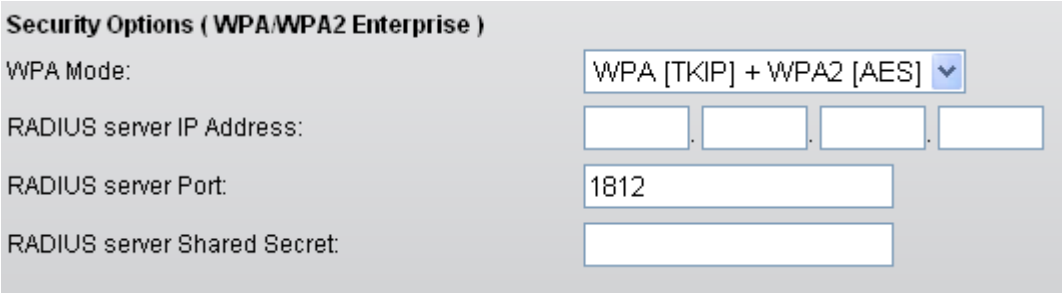
The security mode WPA-PSK (TKIP) does not support 802.11n. When the WPA-PSK (TKIP) is selected in the Web interface, the list of wireless modes only shows the traditional modes 802.11 a/b/g.

WPA/WPA2 Enterprise (For AP/Master mode)

Enterprise security mode provides the security needed for wireless networks in business environments. If you select this security mode, there must have a RADIUS server in your network. It offers individualized and centralized control over access to your Wi-Fi network.

If the wireless client wants to access the network resource, it will send the request to DVW series. And DVW series will forward the request to RADIUS server and forward the response to wireless client. If the wireless client passes the authentication of RADIUS, then it can access the network resource; otherwise it can't access the network resource.

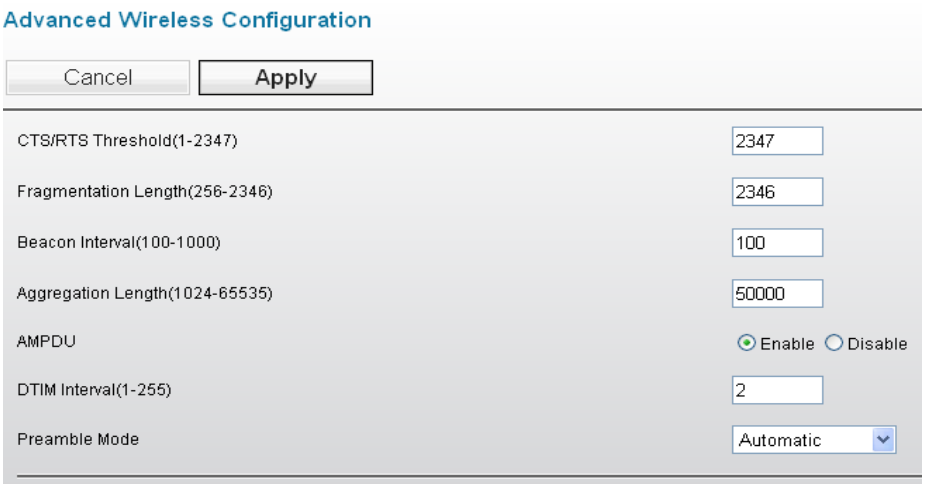




Description	Factory Default
WPA Mode	
• **WPA [TKIP]:** TKIP encryption method is enabled. • **WPA2 [AES]:** AES encryption method is enabled. • **WPA [TKIP]+WPA2 [AES]:** This setting supports both WPA (with TKIP) and WPA2 (AES). You have to use TKIP+AES encryption and configure the RADIUS server settings.	WPA [TKIP] + WPA2 [AES]
RADIUS server IP Address	
Specify the RADIUS server IP address.	None
RADIUS server Port	
Specify the port number of the RADIUS server.	1812
RADIUS server Shared Secret	
Specify the shared secret between the wireless AP and the RADIUS server when the supplicant (wireless client) is authenticated.	None

3.4.3 Advanced Wireless Configuration

There are some advanced wireless parameters which can be configured in this page.



Description	Factory Default
CTS/RTS Threshold	
Specify the threshold packet size of CTS (Clear to Send) and RTS (Request to Send).	2347
Fragmentation Length	
Specify the maximum packet size. Packets larger than the size programmed in this field will be fragmented. The Fragment Threshold value must be larger than the RTS Threshold value.	2346
Beacon Interval	
Specify the frequency interval of the beacon.	100 (ms)
Aggregation Length	
Specify aggregation length of the frame. It can increases throughput by sending two or more data frames in a single transmission.	1024
AMPDU	
Specify whether AMPDU (Aggregated-MAC Packet Data Unit) allows to build a group of frame before transmit frame.	Disabled
DTIM Interval	
Specify how often the DVW series sends out a Delivery Traffic Indication Message.	1
Preamble Mode	
Specify the preamble mode: • **Automatic:** Automatically handle both long and short preamble. • **Short Preamble:** Provide better performance. • **Long Preamble:** Provide more reliable connection or slightly longer range.	Automatic

Notice:

These parameters are reserved for wireless testing and advanced configuration only. If you don't know how to configure, please do not change these settings.

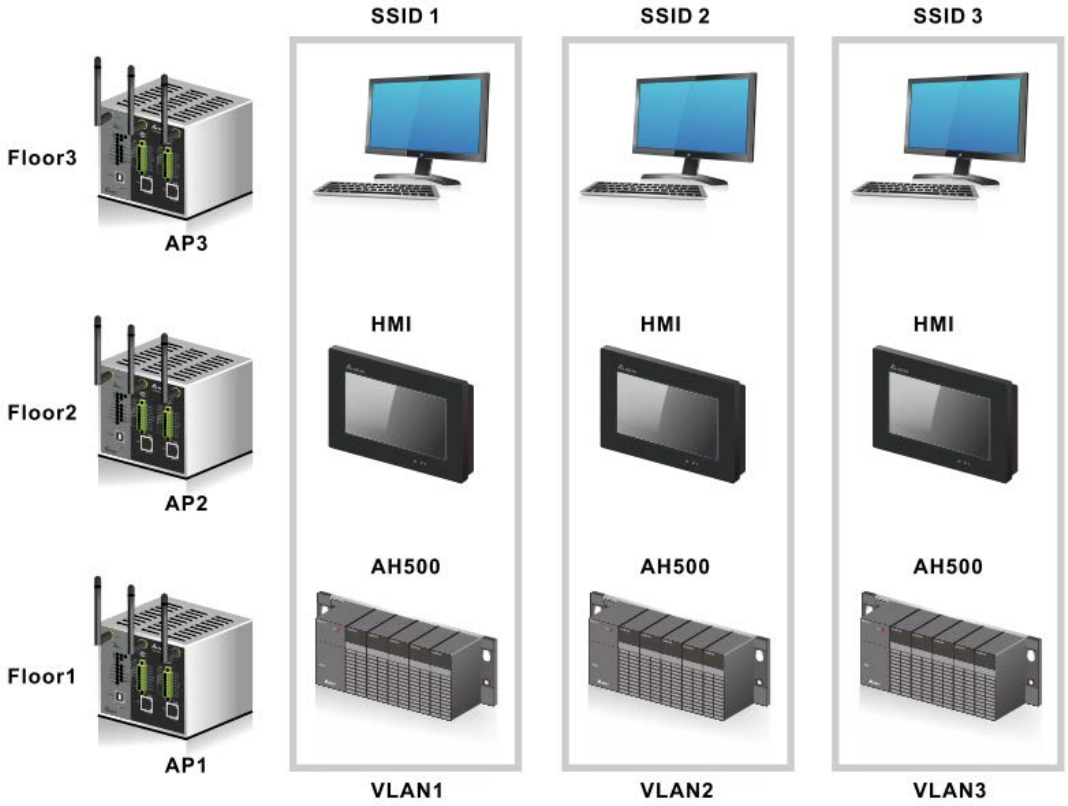
3.5 Advanced

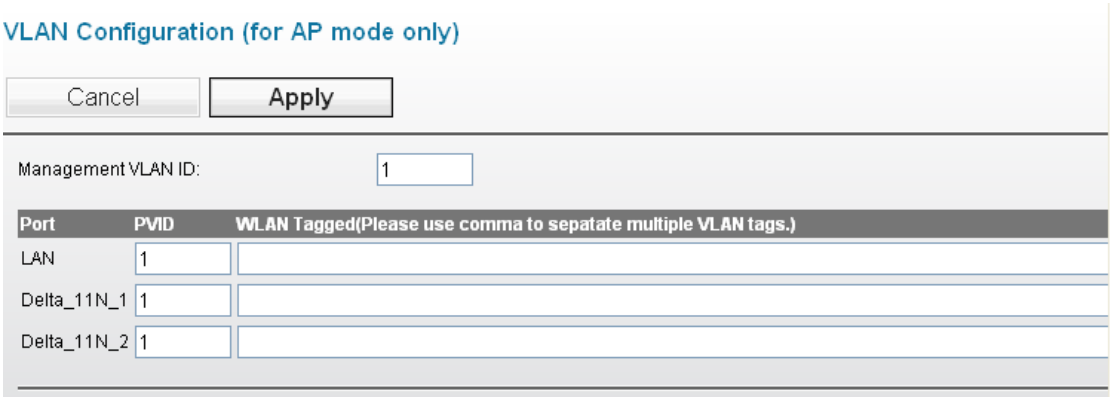
3.5.1 VLAN Configuration

Virtual LAN (VLAN) is a logically group network. DVW provide VLAN function base on SSID. Each SSID can be configured one VLAN ID. DVW can support up to 8 SSIDs.

When DVW transmit or receive packets, it matches the SSID and VLAN ID. So that only members of the VLAN could receive packets from the same VLAN ID members. And VLAN also allow user to access the network from a different place or network devices. So it provides security and flexibility. And it also avoids unnecessary traffic on wireless LAN and maximizing throughput.

For example: Configure department A, B, C to VLAN 1, 2, 3. User only can access the resource which belongs to their department, so the resource in their department can be protected. And they can access the resource in a different floor, even though in a different place. So they don't need to stay in a fixed place to access the resource which belongs to their department.





Description	Factory Default
Management VLAN ID	
Specify the management VLAN ID.	1
Port	
• **LAN:** Display the LAN port number. • **WLAN:** The wireless port for the specific SSID. The number of wireless port depends on how many SSIDs you created.	LAN: 1
PVID	
Specify the port's VLAN ID. PVID is set for the device which connect with this port	1
WLAN Tagged	
Specify which VLANs can communicate with this specific VLAN. The VLAN ID range from 1 to 4094.	None

Notice:

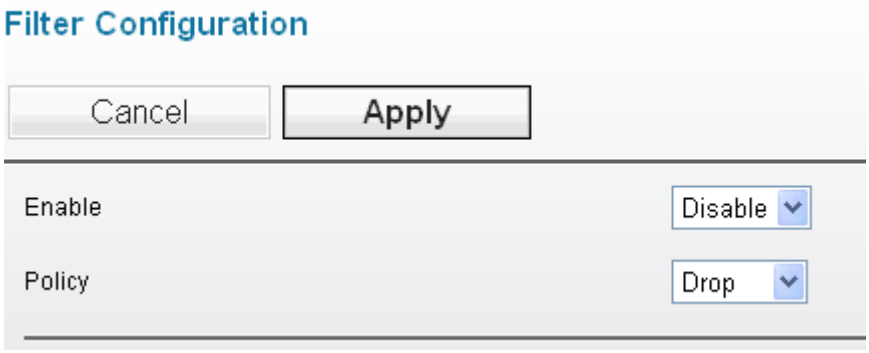
- When the settings of PVID and VLAN ID are the same, VLAN members of the PVID can manage the AP of the VLAN ID.
- After the settings are done, connecting to the VLAN SSID would require a specific IP address or have a DHCP server to do the transmission.

3.5.2 Packet Control

DVW can filter IP-based packets through LAN and WLAN interface by 3 kinds of filters: MAC filters, IP Protocol filters and TCP/UDP port filters. These filters can enhance the network security and performance.

3.5.2.1 Filter Configuration

Settings of 3 filters, MAC filters, IP Protocol filters, and TCP/UDP port filters as well as the packet acceptance.



Description	Factory Default
Enable	
Specify whether the filter configuration is enabled. • **Enable:** Packet filter function is enabled. • **Disable:** Packet filter function is disabled. **The filter priority:** MAC filters > IP Protocol filters > TCP/UDP port filters	Disabled
Policy	
• **Drop:** All packets correspond with the list will be dropped. • **Accept:** Only the packets correspond with the list can be accepted.	Drop

Notice:

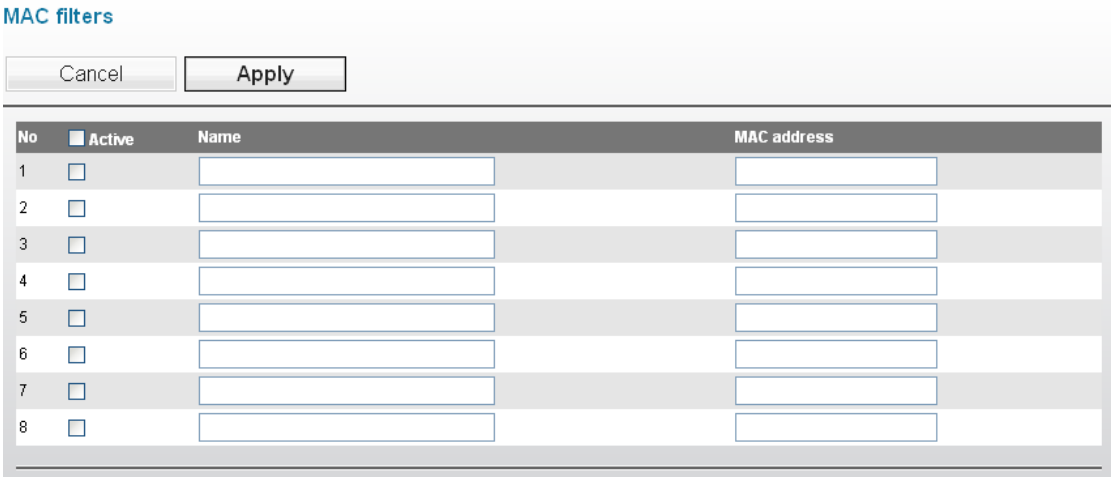
Before you enable the filter function, please notice the **Policy**:

Drop: If there is no data in the filter list, all packets are **accepted**.

Accept: If there is no data in the filter list, all packets are **dropped**.

3.5.2.2 MAC Filters

The MAC filter can accept or drop packets with specified MAC addresses. The MAC address can be configured up to 8 entries.



Notice:

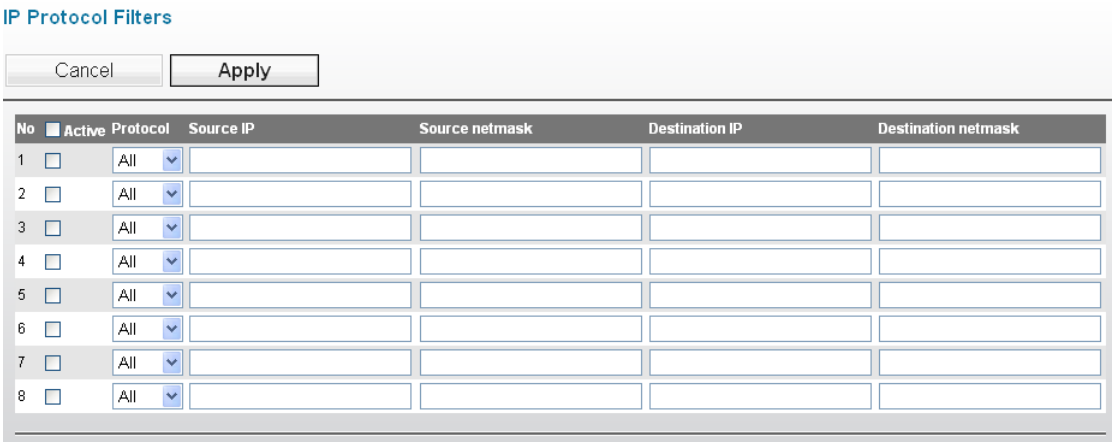
Please check the Active check box for the entries which you want to specify and please remember to configure the policy in **Filter Configuration** page.

3.5.2.3 IP Protocol Filters

The IP Protocol filter can accept or drop packets with specified IP protocol and source/destination addresses. The policy can be configured up to 8 entries.

DVW provides 3 IP protocols items: All, TCP, UDP and ICMP. The Source IP and Destination IP must be specified. You can specify an IP address or a range of IP addresses.

For example, if you enter the IP address 192.168.1.1 and netmask 255.255.255.255, its mean only on IP address 192.168.1.1 is specified. If you enter the IP address 192.168.1.1 and netmask 255.255.255.0, its mean the range of IP address 192.168.1.1 to 192.168.1.254 are specified.



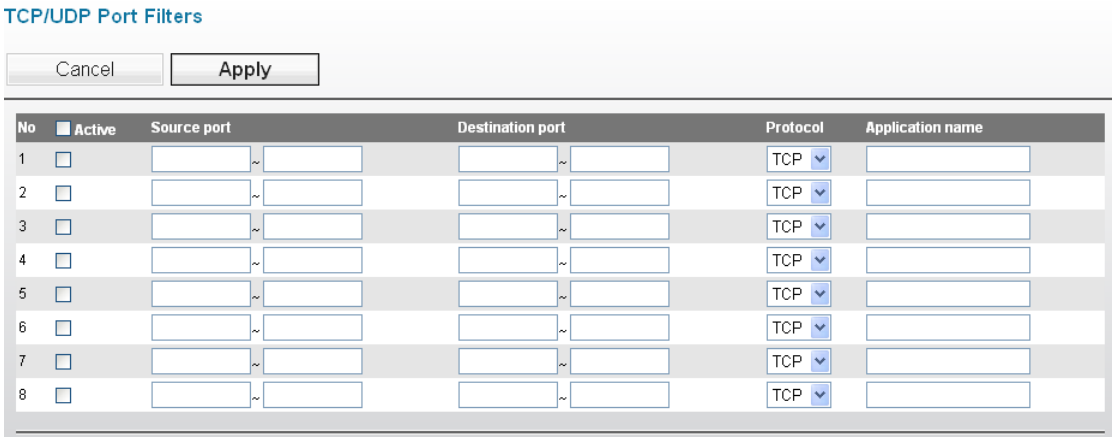
Notice:

Please check the Active check box for the entries which you want to specify and please remember to configure the policy in **Filter Configuration** page.

3.5.2.4 TCP / UDP Port Filters

The TCP/UDP port filter can accept or drop packets with specified port and protocol. The policy can be configured up to 8 entries.

You can specify TCP or UDP protocol, and specify a single port or a range of port. If you want to specify a single port, you can leave blank in end port field; if you want to specify a range of port, the end port can't be larger than the start port.

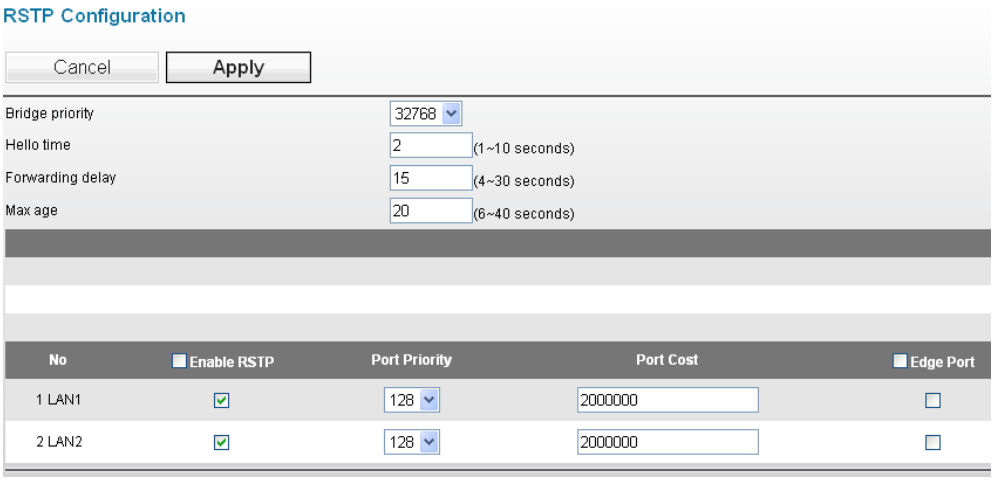


Notice:

Please check the Active check box for the entries which you want to specify and please remember to configure the policy in **Filter Configuration** page.

3.5.3 RSTP Configuration

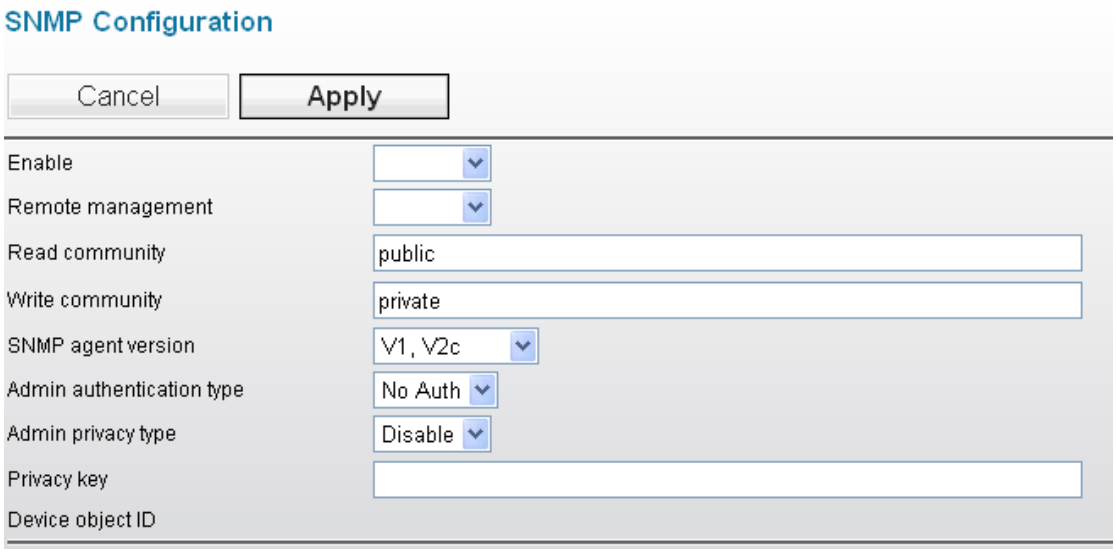
DVW supports STP and Rapid STP function. DVW series support Spanning Tree Protocol (STP) defined in the IEEE802.1d protocol standard and Rapid Spanning Tree Protocol (RSTP) was developed as the IEEE802.1w protocol standard to detect and avoid packets to follow a never ending loop. This function is very useful in link management and redundancy wired/wireless path redundancy. If you need to use this function, please enable the RSTP function of the interface on all DVW seriess in the network.



Description	Factory Default
Bridge Priority	
Each bridge is assigned a priority when they are running STP. After the devices exchange BPDUs, the lowest priority value becomes the root bridge. Select a number that is a multiple of 4096 and the range are between 0 and 61440.	32768
Hello Time	
Enter the time for the root of the Spanning Tree topology sends hello message. For example, if the hello time is 2, the root of the Spanning Tree topology sends a “hello” message to other network devices every 2 seconds in the network. The range is 1~10 seconds.	2
Forwarding Delay	
Enter a waiting time for the device before checking the topology change or not. The range is 4~30 seconds.	15
Max Age	
If the device’s waiting time for receive a hello message is over the Max Age, then it will look itself as a root. The range is 6~40 seconds.	20
Enable RSTP	
Enable or disable the interface to be a node in the Spanning Tree topology.	Unticked
Port Priority	
Specify the port priority. Lower number means the interface has higher priority; higher number means the interface has lower priority.	128
Port Cost	
Specify the port cost. Lower cost means the interface is more suitable to be a node in the Spanning Tree topology.	2000000
Edge Port	
Specify whether the BPDU go through the port. Check the port as an edge port means no BPDU go through the port.	None

3.5.4 SNMP Configuration

Simple Network Management Protocol (SNMP) is an application protocol used for exchanging management information between network devices. SNMP is a member of the TCP/IP protocol suite. SNMP V1, V2 and V3 are supported on the Delta DVW series. When the SNMP protocol version is V1, V2c. the authentication type use a community string. When the SNMP protocol version is V3, then you need to specify the authentication type. If you have data encryption requirement, you can specify the privacy type.



Description	Factory Default
Enable	
Specify whether the SNMP agent is enabled.	None
Remote Management	
Specify whether remote user can manage DVW series by SNMP.	None
Read Community	
Input a community name for the device to be accessed with read-only permission.	Public
Write Community	
Input a community name for the device to be accessed with read/write permission.	Private
SNMP Agent Version	
Specify the SNMP version of the device.	V1, V2c
Admin Authentication Type	
Specify the admin authentication type to verify that the message is from a valid source. It works when SNMP agent version is “V1, V2c, V3” or “V3”. • **No Auth:** No Authentication. Only use admin account to access objects. • **MD5:** Use MD5 algorithms for authentication. • **SHA:** Use SHA algorithms for authentication.	No Auth
Admin Privacy Type	
Specify the data encryption type. It works when SNMP agent version is “V1,	Disabled

Description	Factory Default
V2c, V3" or "V3". • **Disable:** No data encryption. • **AES:** Use AES-based data encryption. • **DES:** Use DES-based data encryption.	
Privacy Key	
Input a data key for data encryption.	None
Device Object ID	
This field displays the Delta DVW series's OID.	Fixed

3.5.5 Storm Control

A traffic storm occurs when incoming packets flood the LAN, which causes the decreasing of the network performance. Storm control protects can avoid flooding packets affect the network performance. DVW provides you to configure both Storm Protection and Multicast & Flooding for LAN and WLAN for incoming and outgoing traffic.

Description	Factory Default
Storm Protection	
• **Enable:** Storm protection is enabled. • **Disable:** Storm protection is disabled.	Disabled

3.6 Auto Warning Settings

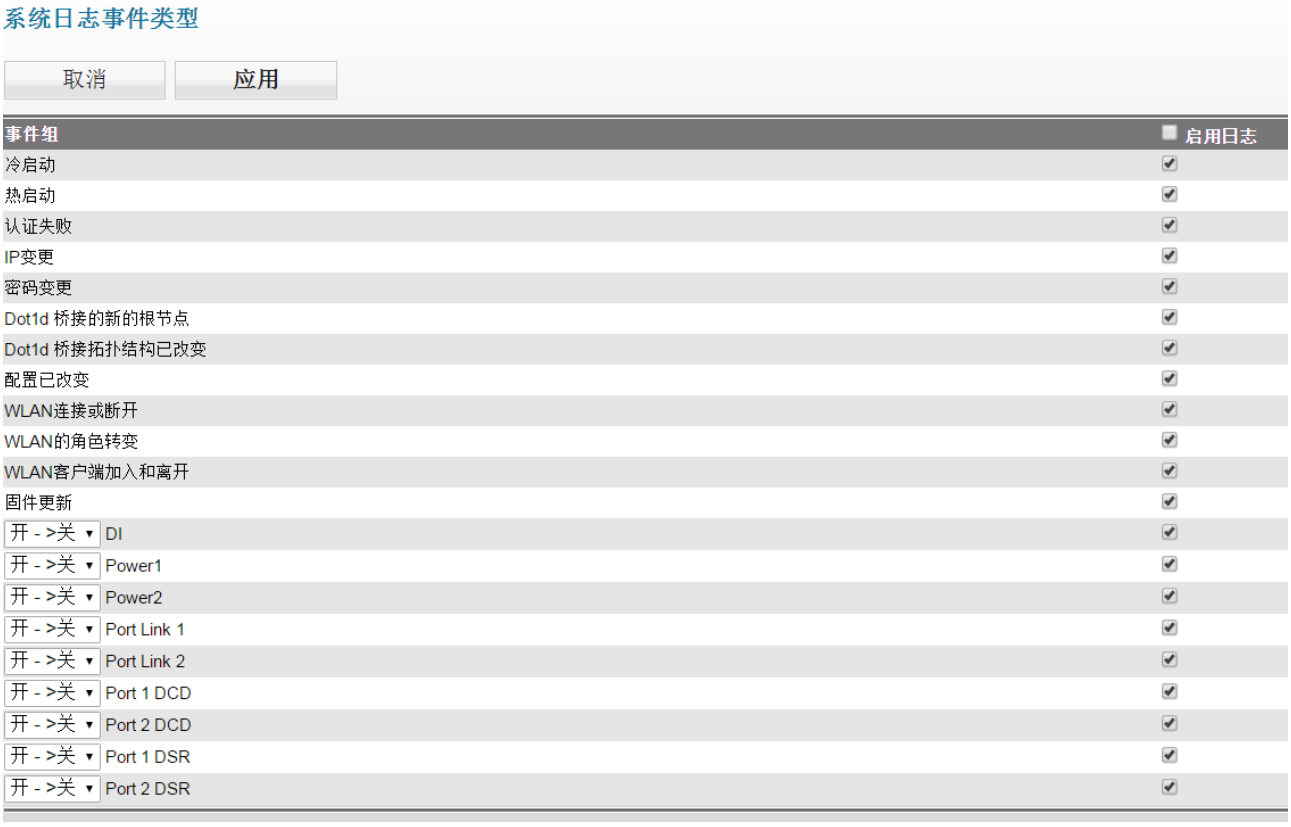
Industrial Ethernet devices in an industrial environment are very important. These devices usually need to work for a long time and are usually located at the end of the system. So if the Delta DVW seriess need to be maintained, it must provide some messages to the maintainer. Even when the maintainers or engineers do not stay in the control room, they still need to be informed the status of the devices. Delta DVW seriess provides different approaches to warn engineers automatically, such as log, E-mail, relay output and SNMP trap.

3.6.1 SysLog

Syslog function provides you to monitor the device. When faults, errors, configuration changes or specified events happen, this function can generate messages and forward the messages to a specified syslog server.

3.6.1.1 Syslog Event Types

Please check the box to enable the event items. The default settings are disabled (unticked).

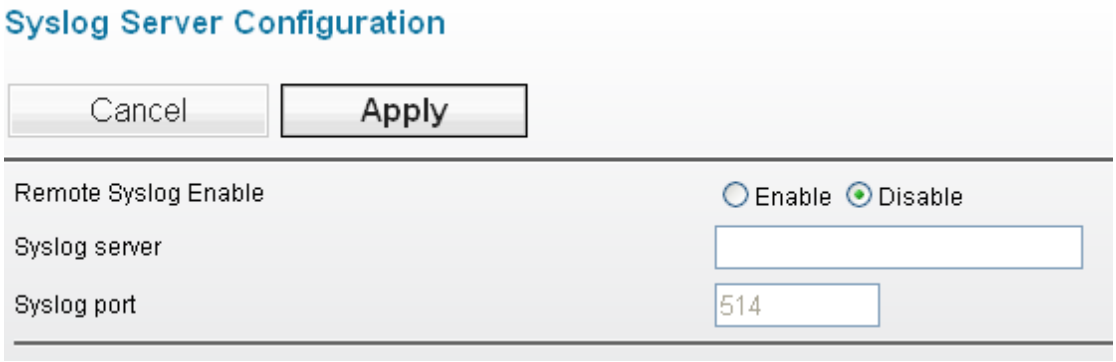


Description	Factory Default
Cold Start	
Power off and then power on to start the system.	Enabled
Warm Start	
When the power is still on, restart the system.	Enabled
Authentication Failure	
Log in failure (wrong ID / Password)	Enabled
IP Changed	
Change the IP address of the DVW series.	Enabled
Password Changed	
Change the login password.	Enabled
Dot1d Bridge New Root	
Set up a new root.	Enabled
Dot1dBridge Topology Changed	
When error occurred in the bridge root or when it is powered off. The backup bridge root can be the bridge root of the appointed topology.	Enabled
Configuration Changed	
Any configuration of the DVW series changed.	Enabled
WLAN Connection or Disconnection	
When in the Client mode, any wireless device joined or left.	Enabled
WLAN Role Change	
Operation mode or configuration changed	Enabled
WLAN Client Joined / Left	
When in the Client mode, any client end joined or left.	Enabled
Firmware Update	
When updating firmware	Enabled
DI (ON→OFF) or (OFF→ON)	
Trigger DI to **(ON→OFF) or (OFF→ON)**	Enabled
Power 1/2 (ON→OFF) or (OFF→ON)	
Input power 1 / 2 **(ON→OFF) or (OFF→ON)**	Enabled
Port Link 1/2 (ON→OFF) or (OFF→ON)	

Description	Factory Default
Pork link 1 / 2 **(ON→OFF) or (OFF→ON)**	Enabled
Port 1/2 DCD (ON→OFF) or (OFF→ON)	
DCD detected in the serial port, trigger I/O to (ON→OFF) or (OFF→ON)	Enabled
Port 1/2 DSR (ON→OFF) or (OFF→ON)	
DSR detected in the serial port, trigger I/O to (ON→OFF) or (OFF→ON)	Enabled

3.6.1.2 Syslog Server Configuration

This function allows users to have the system log sent to the syslog server once there is any event occurs. DVW series can configure 1 syslog server and its transport layer protocol is UDP.



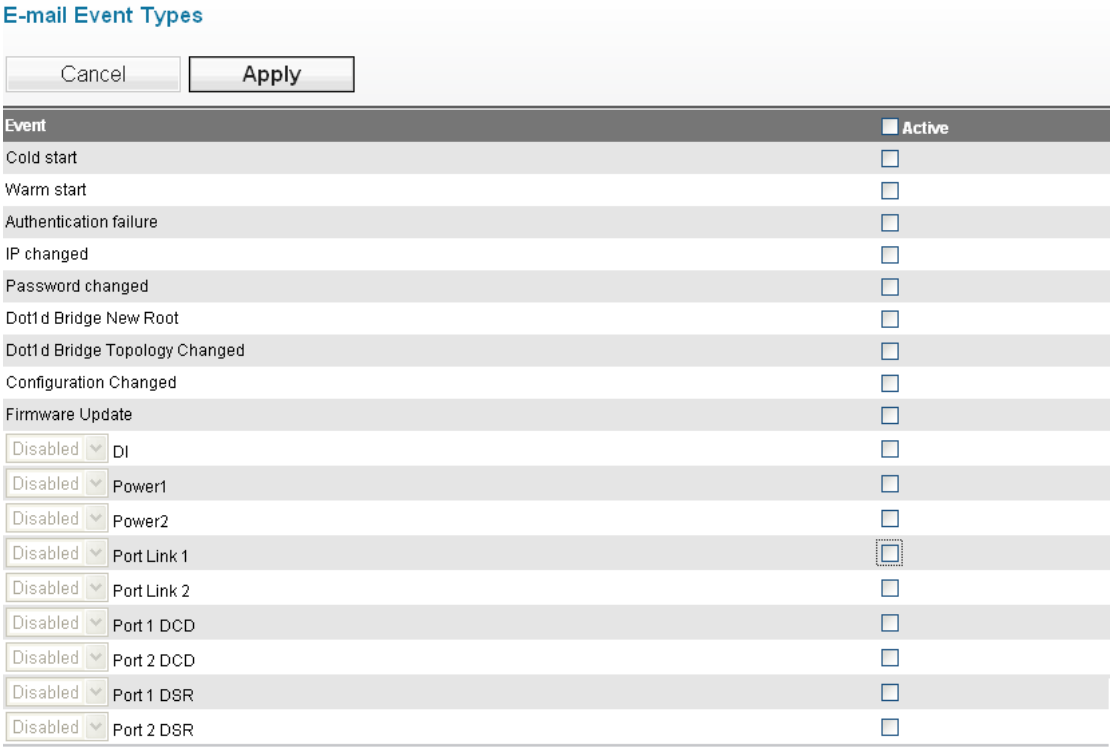
Description	Factory Default
Remote Syslog Enable	
Enable or disable the remote syslog function	Disabled
Syslog Server	
The IP address of the syslog server	None
Syslog Port	
Set up the local UDP port (the setups should be the same as the UDP port of the syslog server , ranging from 1-65535)	514

3.6.2 E-mail Alarm

When malfunctions, errors, configuration changed, or other appointed events occurred, the system can create a warning and send the warning to the appointed email address.

3.6.2.1 E-mail Event Types

Please check the box to enable the event items you'd like to be notified. The default settings are disabled (unticked).

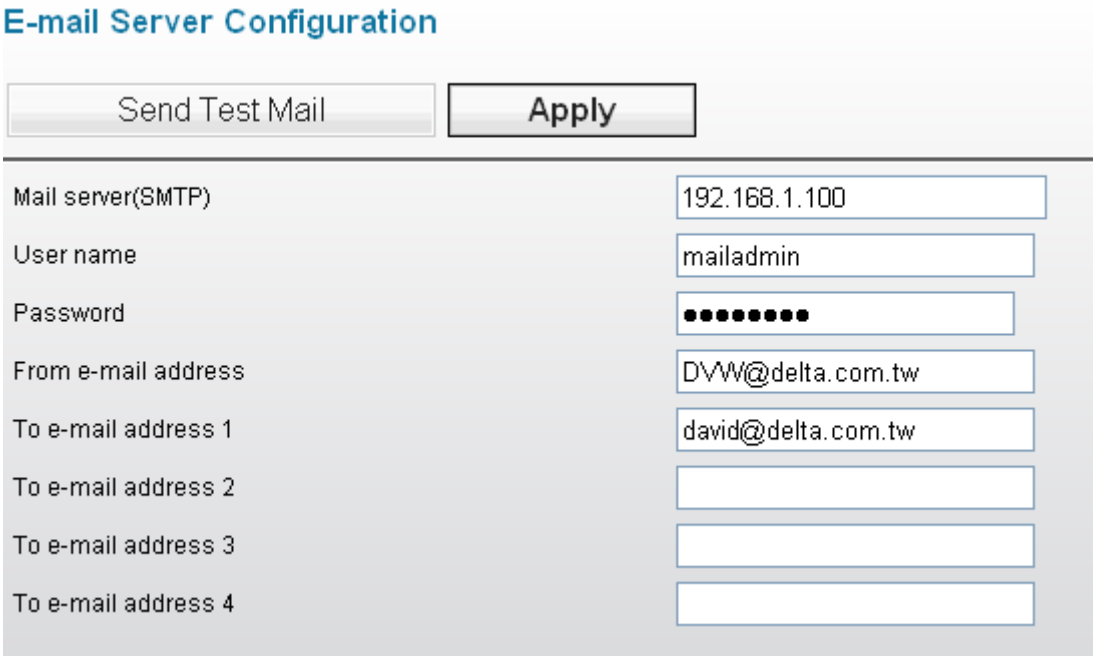


Notice:

Please refer to section 3.6.1.1 Syslog Event Types for more information on the event types.

3.6.2.2 E-mail Server Configuration

The E-mail server parameters can be configured in this page. The maximum e-mail addresses which you can specify are 4. You can also send Test Mail to see if the email server configuration is complete.



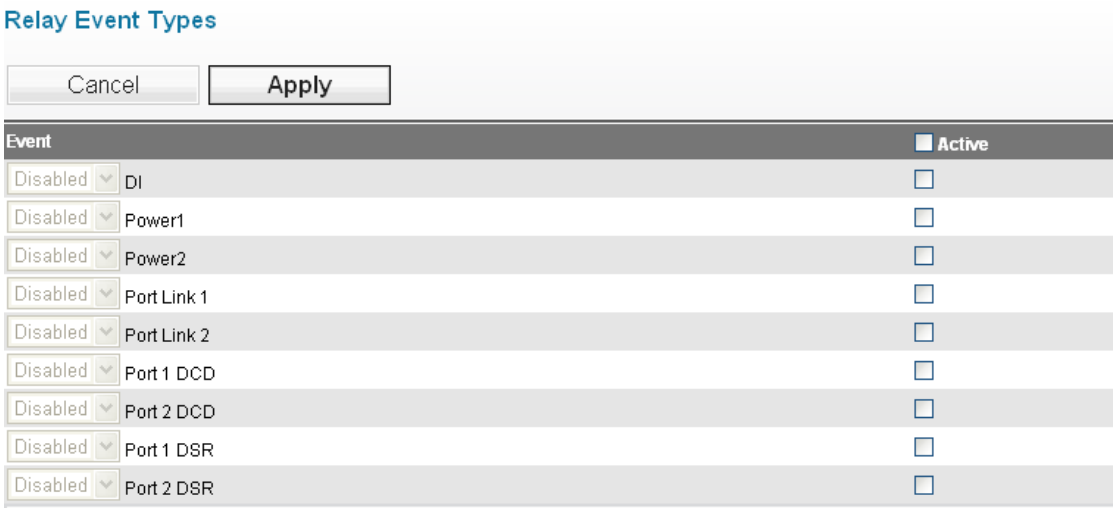
Description	Factory Default
Mail Server (SMTP)	
Set up the IP address or domain address of the syslog server (SMTP)	None
User Name / Password	
Set up the user name and the password for the syslog server	None
From Email Address	
Set up the administrator's email address; once the warning email is sent, this email address will be shown on the sender's section. Up to 63 characters can be inputted.	None
To Email Address 1 / 2 / 3 / 4	
Set up the receipt's email address; up to 63 characters can be inputted.	None

3.6.3 Relay Alarm

Relay alarm is used to monitor power, DI and port status and you can configure the alarm events. When the event has been triggered, the alarm LED will be ON.

3.6.3.1 Relay Event Types

Please check the box to enable the event items you'd like to be notified. The default settings are disabled (unticked).



Notice:

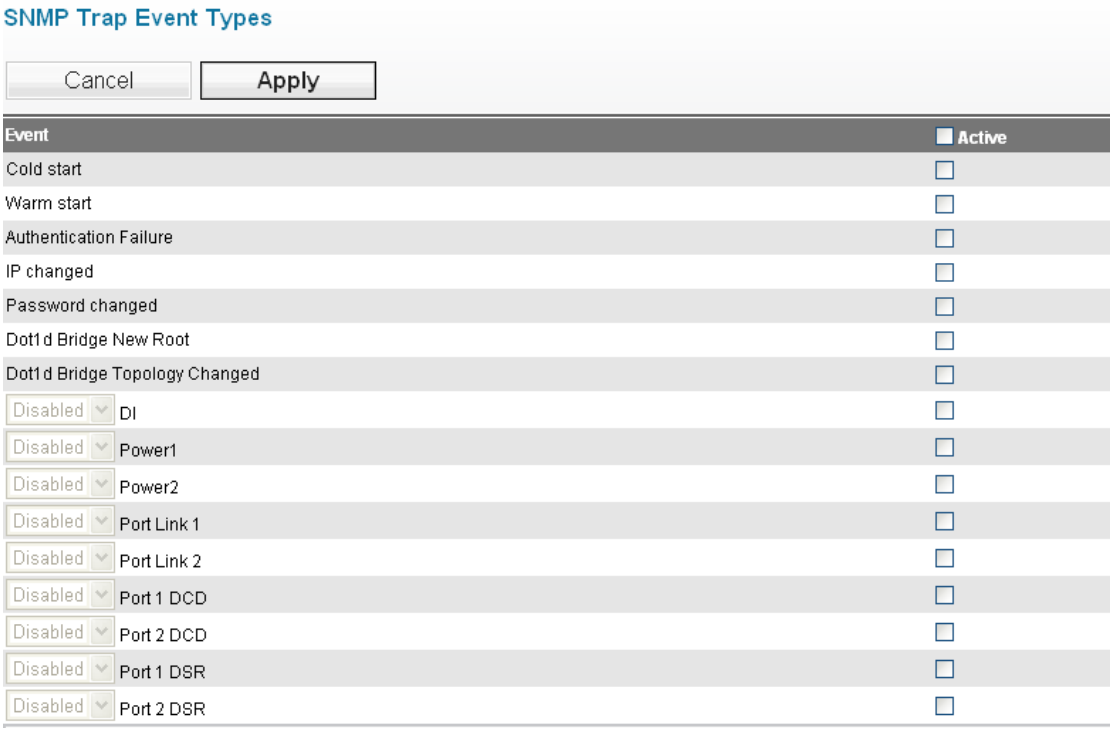
Please refer to section 3.6.1.1 Syslog Event Types for more information on the event types.

3.6.4 SNMP Trap

NMS (Network Management Station) usually manage and monitor many SNMP agents. If manager pre-configure the event, then the SNMP agents will send a message as a trap when the event has been triggered.

3.6.4.1 Trap Event Types

Please check the box to enable the event items you'd like to be notified. The default settings are disabled (unticked).

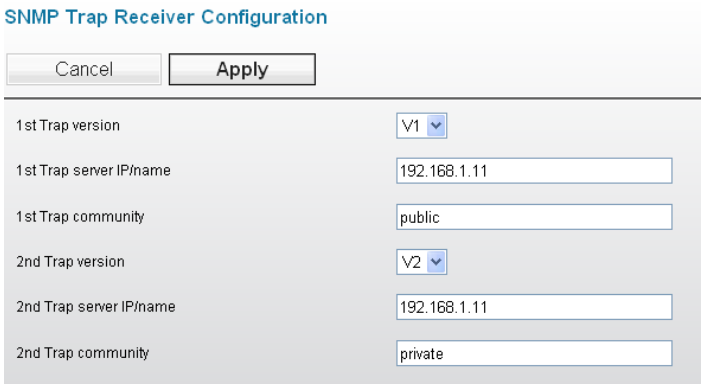


Notice:

Please refer to section 3.6.1.1 Syslog Event Types for more information on the event types.

3.6.4.2 SNMP Trap Receiver Settings

Users can set up the SNMP Trap receiver; SMIv1 MIBs (SNMPv1) and SMIv2 MIBs (SNMPv2c) are supported.



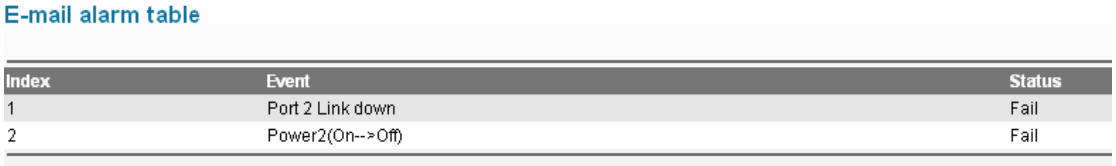
Description	Factory Default
1st/ 2nd Trap version	
Specify the SNMP trap version in SNMPv1 or SNMPv2.	V1
1st/ 2nd Trap server IP/name	
Enter the IP address or the name of SNMP Trap server in your network.	None
1st/ 2nd Trap community	
Input the community string for authentication.	None

3.7 Monitoring Settings

DVW series provides many monitoring function in this group. Includes alarm tables, Ethernet wire & wireless status, DHCP client and serial port status.

3.7.1 Email Alarm Table

When Email event has been triggered, this page displays the event and status.

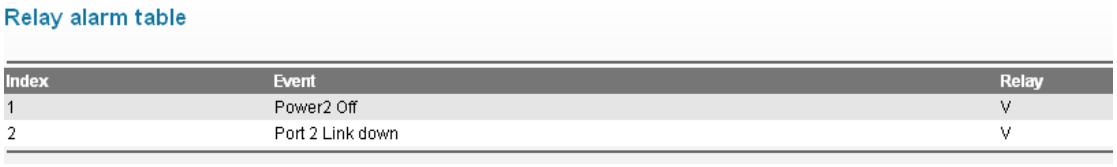

E-mail alarm table

Index	Event	Status
1	Port 2 Link down	Fail
2	Power2(On-->Off)	Fail

Item	Description
Index	The index of the event.
Event	The event which has been triggered.
Status	The status of the event.

3.7.2 Relay Alarm Table

When relay event has been triggered, this page displays the event and status.

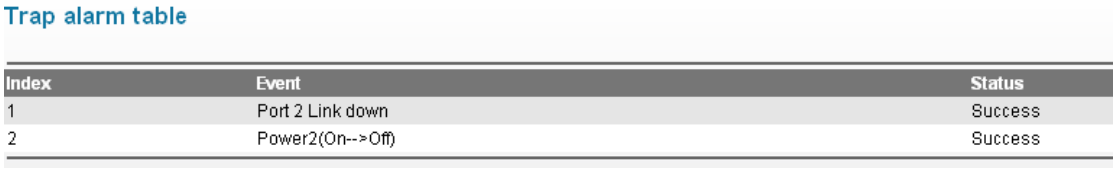

Relay alarm table

Index	Event	Relay
1	Power2 Off	V
2	Port 2 Link down	V

Item	Description
Index	The index of the event.
Event	The event which has been triggered.
Status	The status of the event.

3.7.3 Trap Alarm Table

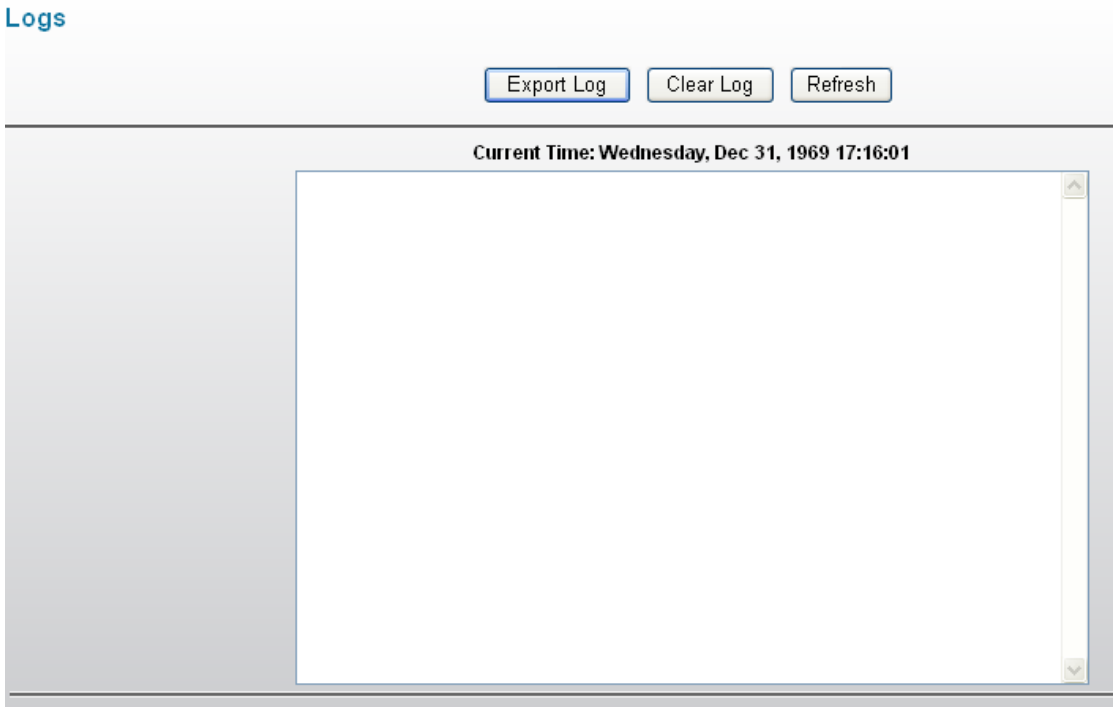
When SNMP trap event has been triggered, this page displays the event and status.



Item	Description
Index	The index of the event.
Event	The event which has been triggered.
Status	The status of the event.

3.7.4 System Log

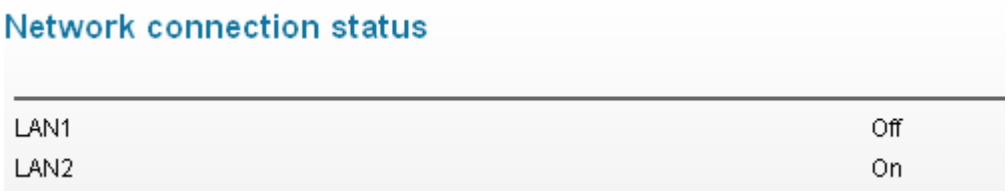
System log can record all events which happened on DVW series. You can use the Export Log button to backup the logs.



Item	Description
Export Log	Export all logs to a file.
Clear Log	Clear all log on the device.
Refresh	Refresh the log page.

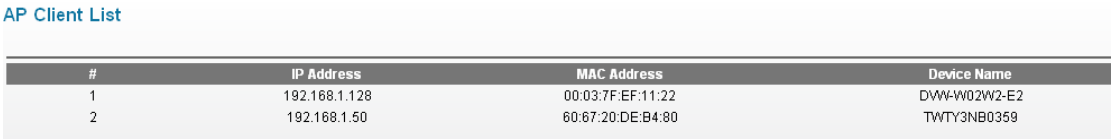
3.7.5 Network Connection Status

Network connection status page provides user to monitor the physical LAN port connection status.



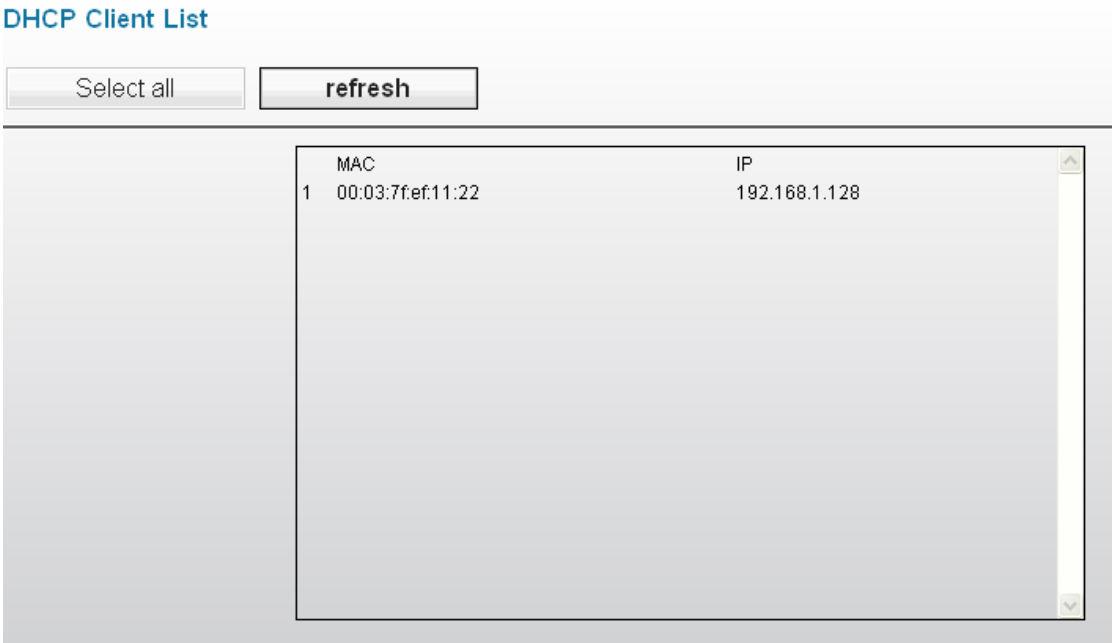
3.7.6 AP Client List

AP Client List displays all wireless which associates with DVW series currently. The information includes IP Address, MAC Address and Device Name.



3.7.7 DHCP Client List

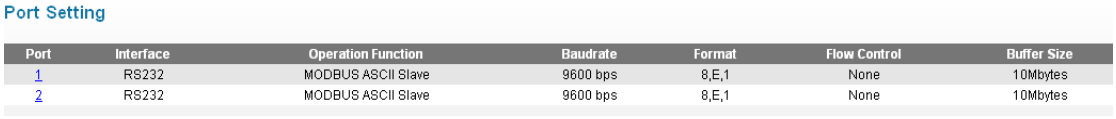
DHCP Client List page displays all the clients which get the IP address from DVW series.



Item	Description
Select All	Select all clients on the DHCP Client List.
Refresh	Refresh the DHCP Client List

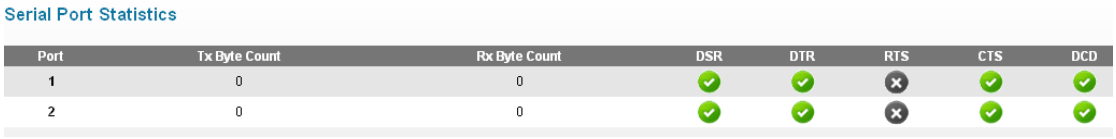
3.7.8 Serial Port State

Serial Port State page displays the serial port information. You can modify the serial port settings in Port Configuration page.



3.7.9 Serial Port Statistics

Serial Port Statistics page displays the number of serial Tx and Rx packet number and data transmission status for each serial port.

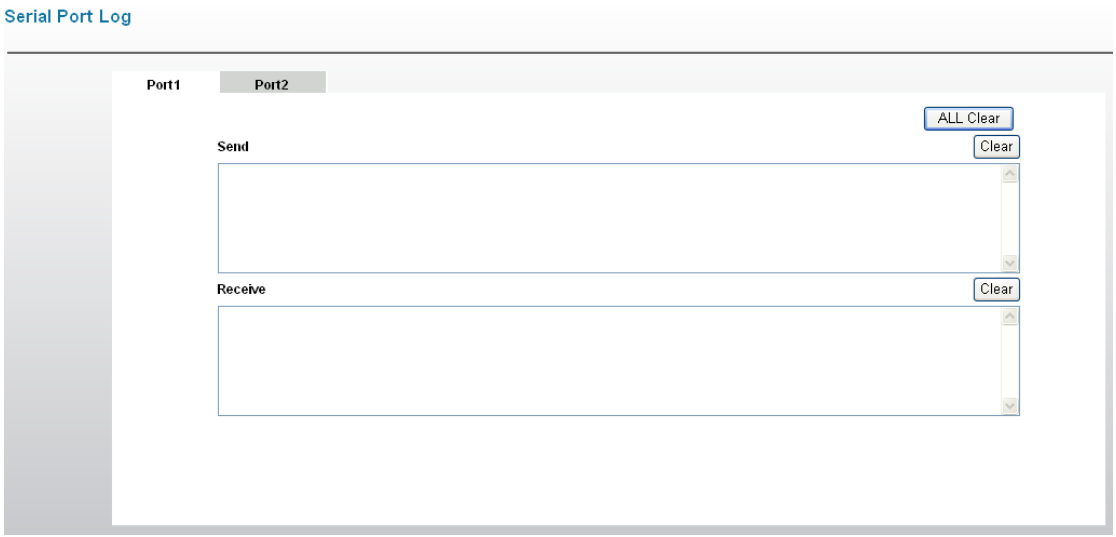


3.7.10 Serial Port Error

Serial Port Error page displays the current number of frame, parity, overrun and break errors for each port.

3.7.11 Serial Port Log

Serial Port Log page displays the logs of serial port. Users can choose to see contents of one single port or contents of the sent and received data.



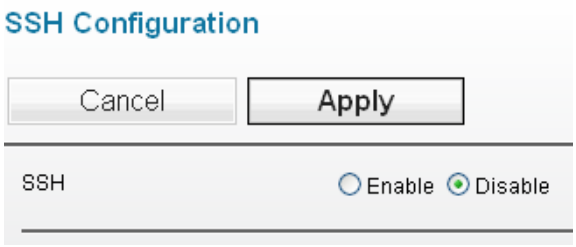
Item	Description
Port 1 / 2	Display the contents of the sent and received data in port 1 or 2
Send	Clear the contents of the sent data in port 1 or 2
Receive	Clear the contents of the received data in port 1 or 2
All Clear	Clear the every content of the sent and received data in port 1 or 2
Clear	Clear the contents of the sent or received data in port 1 or 2

3.8 Management Access

Delta DVW series supports not only web interface to manage the device. You also can use CLI (Command Line Interface) to configure the DVW series by Secure Shell (SSH) and Telnet.

3.8.1 SSH Configuration

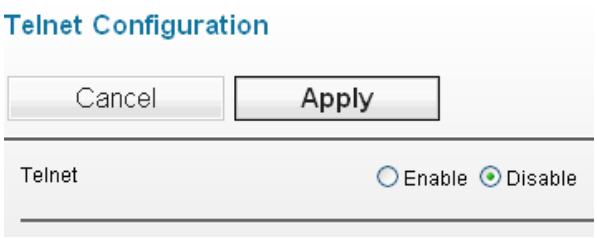
You can configure SSH configuration in this page.



Description	Factory Default
SSH	
Specify the status of SSH. • **Disable**: SSH is disabled. • **Enable**: SSH is enabled.	Disabled

3.8.2 Telnet Configuration

You can configure Telnet configuration in this page.



Description	Factory Default
Telnet	
Specify the status of Telnet. • **Disable**: Telnet is disabled. • **Enable**: Telnet is enabled.	Disable

3.9 Maintenance

Maintenance functions provide some tools for administrator to upgrade, backup data and diagnose the network.

3.9.1 Session Timeout

Users can set up the login overtime, once the login time is over the time set, a warning will show up and ask users to log in again. It is suggested to use this function to enhance security.

Description	Factory Default
Session Timeout (minutes)	
Set up the login overtime • Set up the login overtime in the range of 1-60 mins • Set up the overtime to 0 and this function will be disabled.	5 minutes

3.9.2 Password

You can change the password of the administrator account. We recommend you change the password regularly. For security reasons, please change the default password “password”.

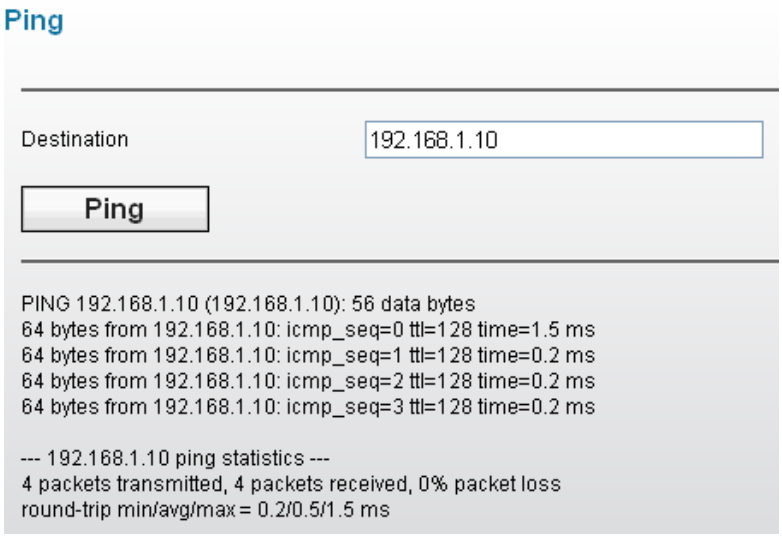
Description	Factory Default
Old Password	
The current password	None
Set Password	
Set up a new password	None
Repeat New Password	
Input the new password again	None

Notice:

For the system security, please do not use the default password and please set a new administrator password during the initial configuration.

3.9.3 Ping

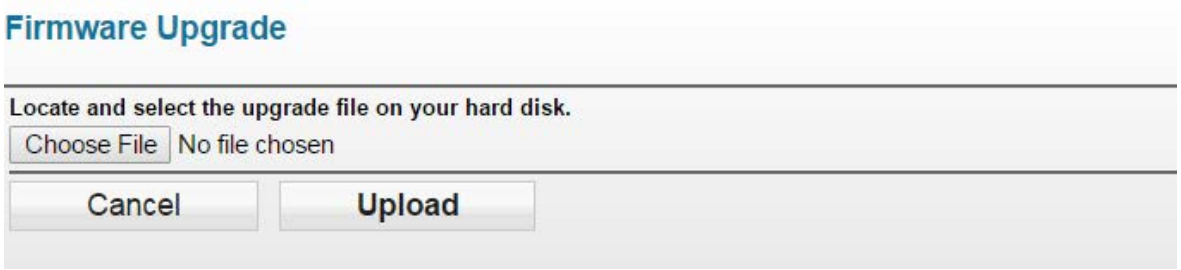
Ping function can help administrator to diagnose the network status. Input the IP address which you want to check the connection.



Description	Factory Default
Destination	
Input the IP address of the connection that you'd like to check.	None

3.9.4 Firmware Upgrade

The DVW regularly releases new firmware versions to enhance product performance and add more functions. It's highly recommended to check and perform a firmware upgrade for your DVW series periodically. You can download the latest firmware file from Delta's download center.



Notice:

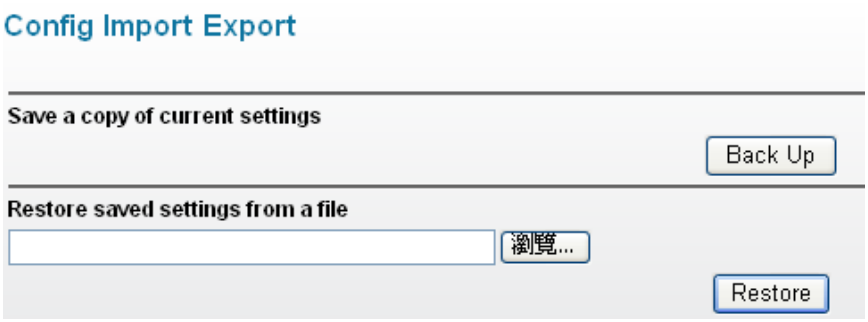
- Please backup your DVW configurations before performing a firmware upgrade.
- Do **NOT** turn off the DVW during a firmware upgrade; otherwise an unexpected error may occur to your DVW.
- It's recommended to **RESTORE TO FACTORY DEFAULT SETTINGS** after performing a firmware update.

3.9.5 Log Export

Log export function can help you to save the log file in your PC or storage devices.

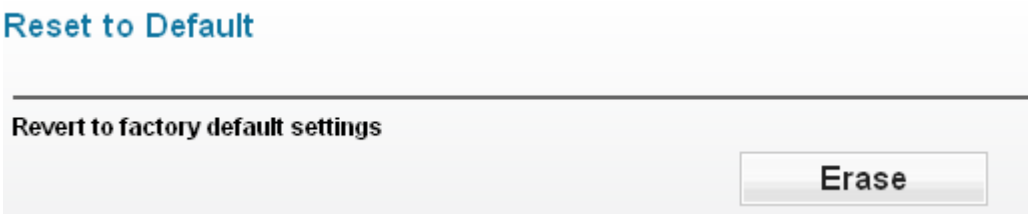
3.9.6 Config Import Export

The config file can be saved in your PC or storage devices. And you can import the config file to another DVW series.



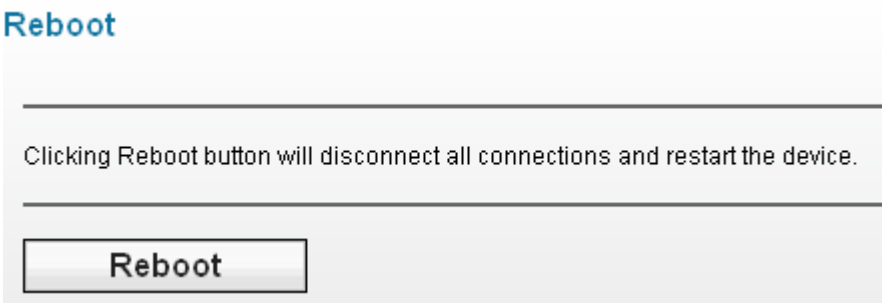
3.9.7 Reset to Default

After you click the Erase button, the settings on DVW will revert to factory default settings.



3.9.8 Reboot

The reboot function can reboot DVW via web interface.



3.9.9 Logout

Logout can disconnect the HTTP session. After you finish the configuration, we recommend you logout for security reasons.

MEMO

4

Chapter 4 IEXplorer Utility Introduction

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Delta has many kinds of industrial products and network devices. If user has many Delta products, IEXplorer utility can provide you to search them via one interface. IEXplorer utility can search for IES series products, DVP series products and some Delta products which have extend communication card. It can help you know the IP address of the device, modify the configuration and upgrade the firmware.

IEXplorer utility supports these models:

- DVS-110W02-3SFP
- DVS-108W02-2SFP
- DVW-W02W2-E2
- DVW-W02W2-E2-CN
- IFD9506
- IFD9507
- RTU-EN01
- DVPEN01-SL
- DVP12SE
- DVP-FEN01
- DVPSCM12-SL
- DVPSCM52-SL
- ASDA-M
- CMC-MOD01
- CMC-EIP01

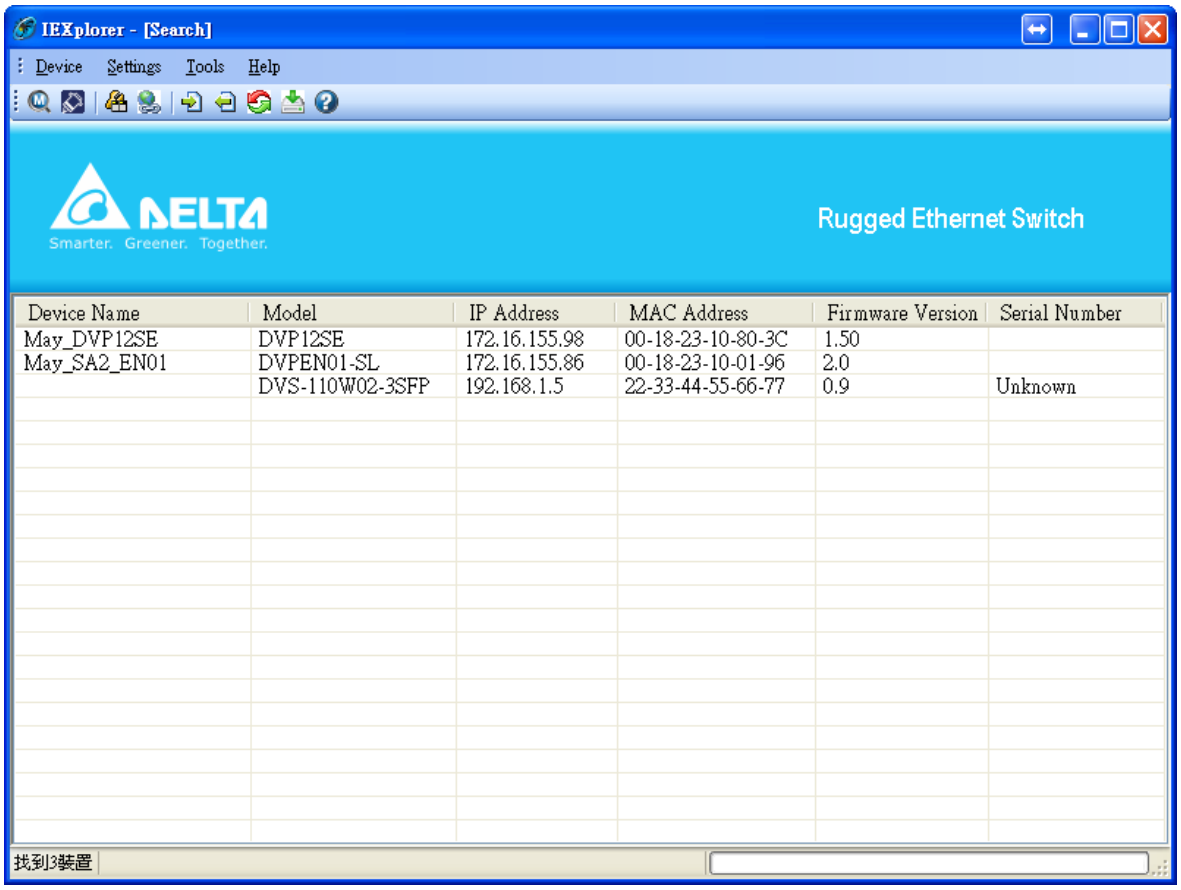
More models coming soon

Compatible OS: Window XP SP2, Window 7 (32/64 bits)

4.1 Starting the Configuration

After you finish the installation, you can find the IEXplorer icon on the desktop. Double-click the icon to run the program.

After double-clicking the icon, you can see the IEXplorer interface as below:

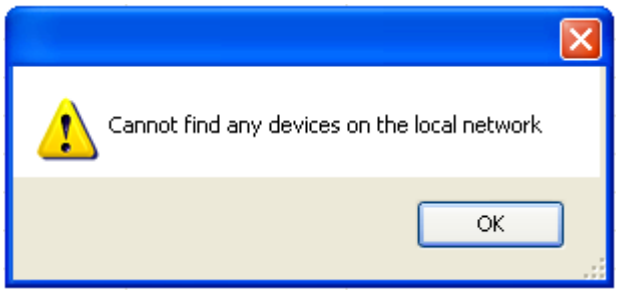


4.1.1 Device

There are three items in Devices: Search, Virtual COM and Exit.

4.1.1.1 Search

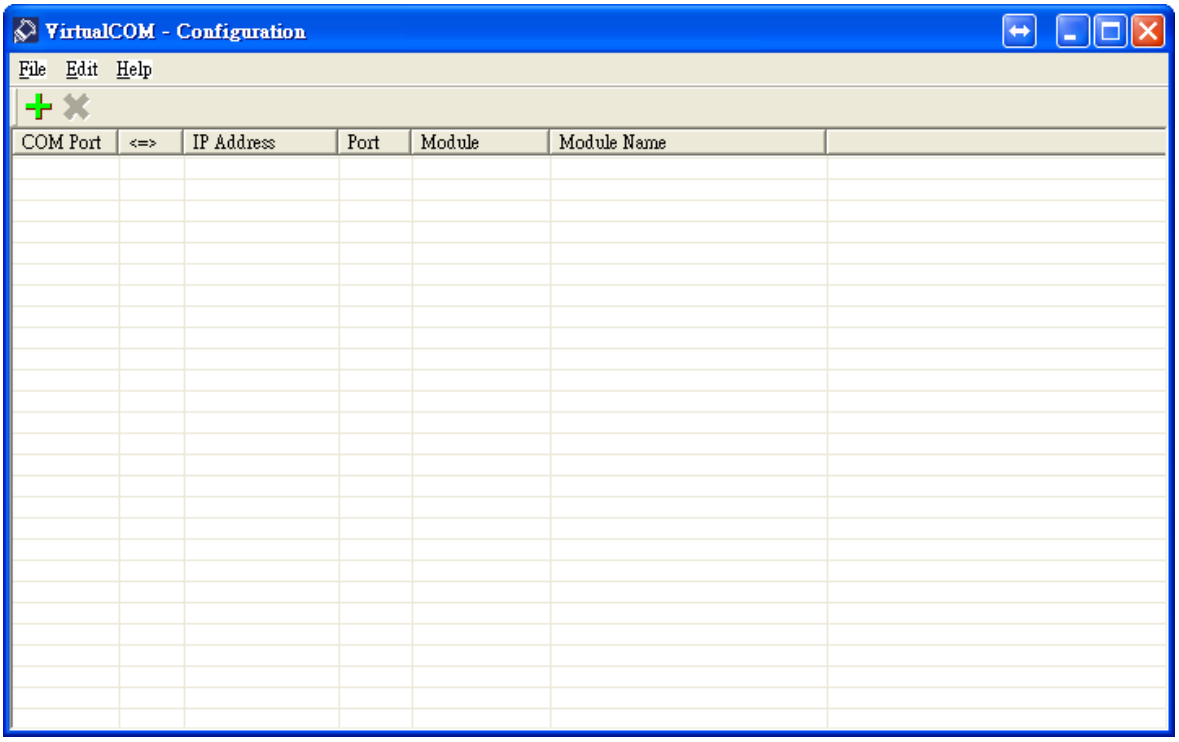
When utility can't find any devices, the message box pops-up.



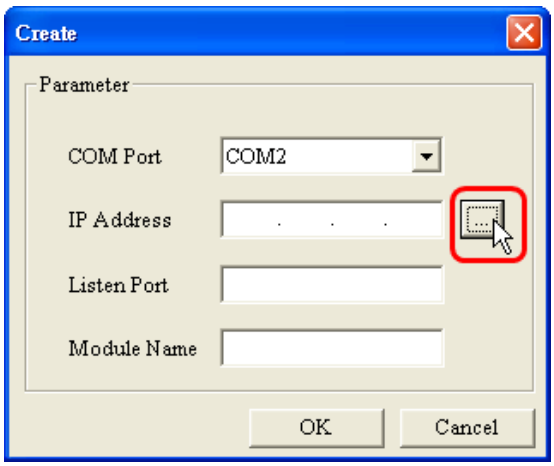
The auto search function performs every 1 minute. If the device doesn't exist anymore, then it will be moved from list view.

4.1.1.2 Virtual COM

When you select Virtual COM, the Virtual COM in DCISoft will be executed.



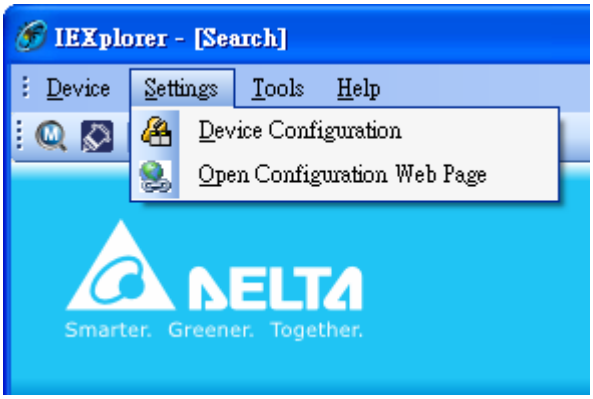
Note:



Before you create a virtual COM port, we recommend you use tool's scan function replace input IP address manually.

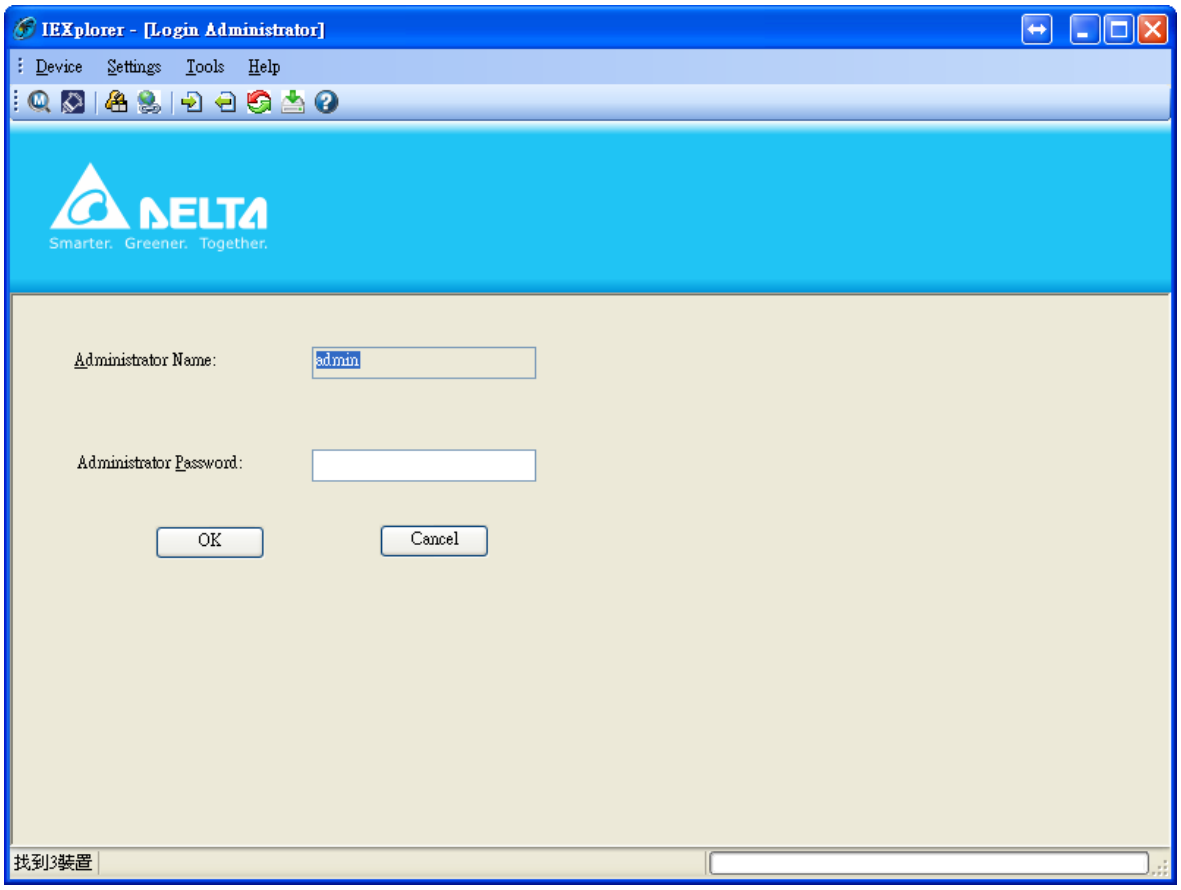
4.1.2 Settings

IEXplorer utility provides two ways to configure the devices. You can configure the basic settings via **Device Configuration** or configure completely settings via **Open Configuration Web Page**. The **Settings** item only can be clicked when you select DVS or DVW series products in list view.

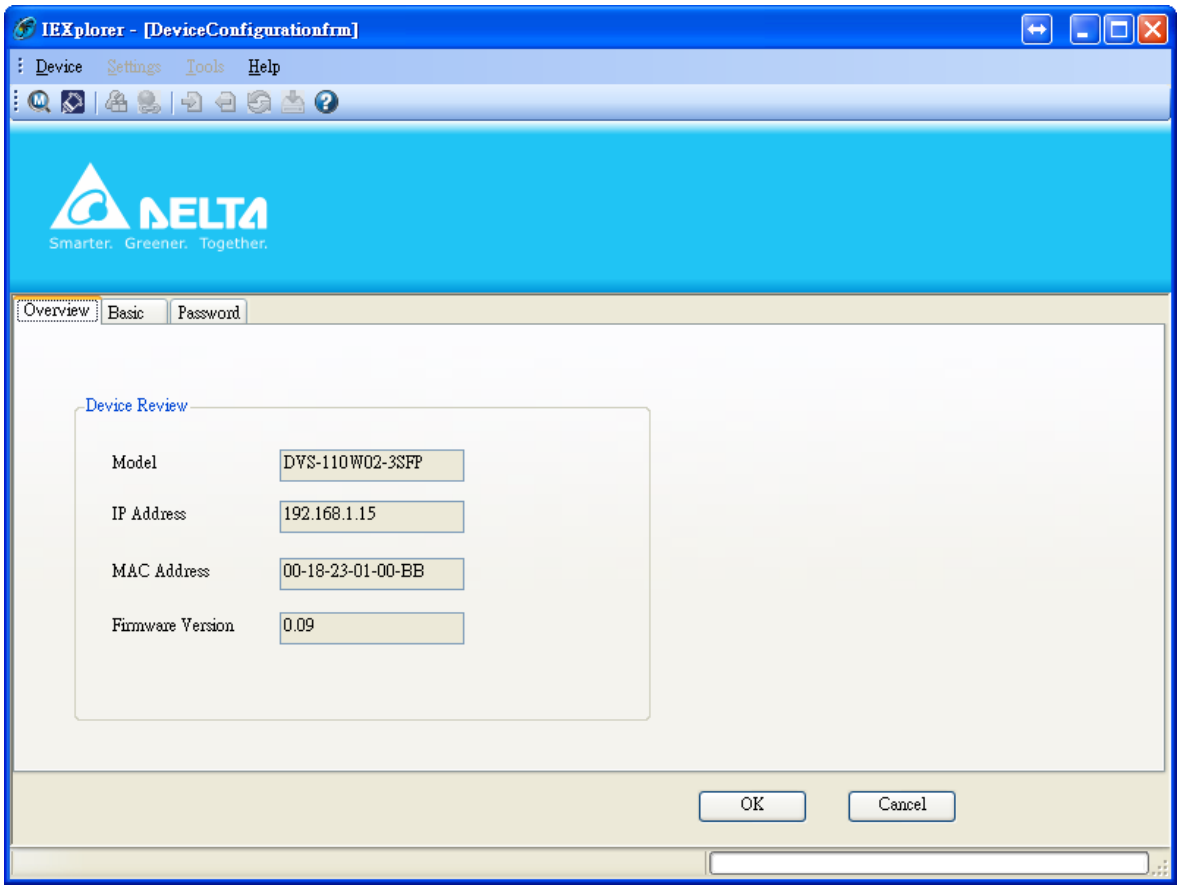


4.1.2.1 Device Configuration

The login ID and password are the same as the web interface.



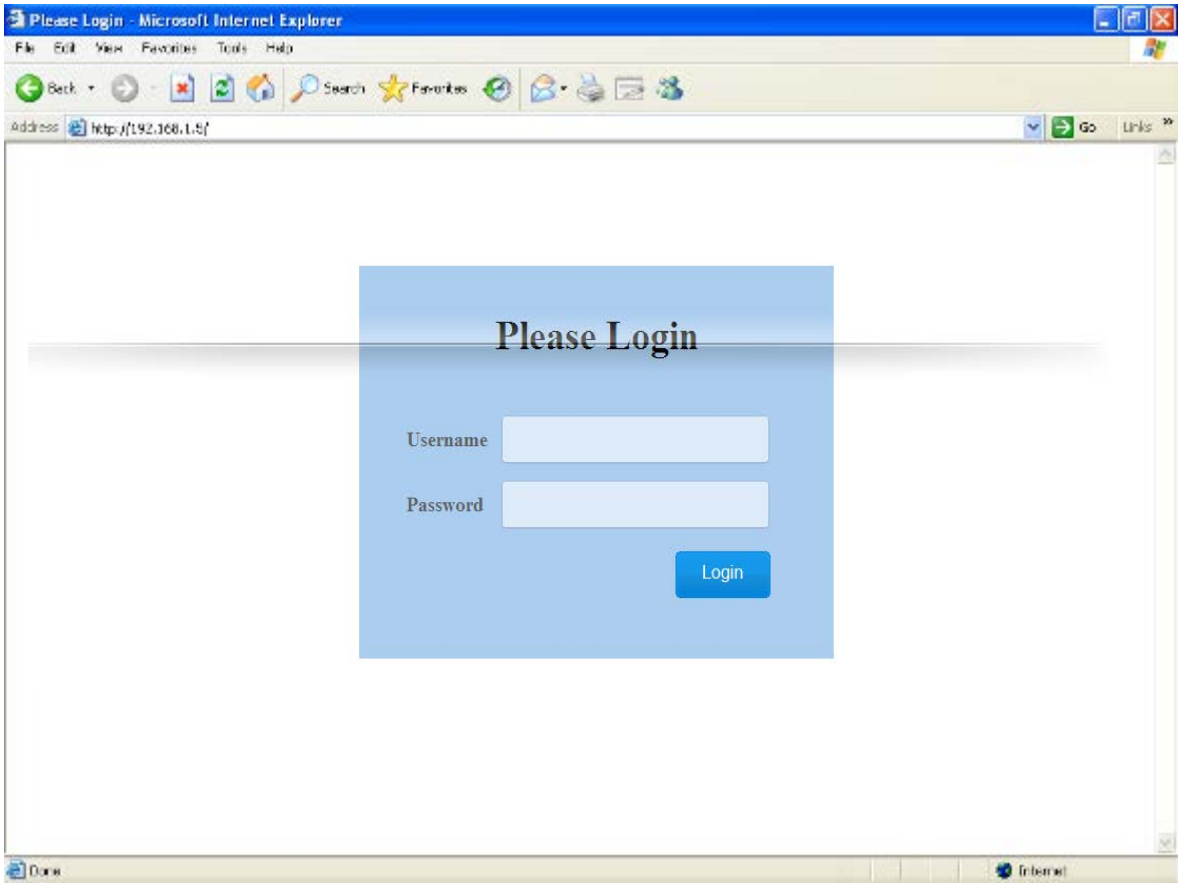
After the authentication progresses, the basic setting interface displays as below:



You can configure the device name, IP information, modify the password, and reset it to factory default setting in this interface.

4.1.2.2 Configuration Web Page

If you select **Open Configuration Web Page**, the web interface will be display.



Note:

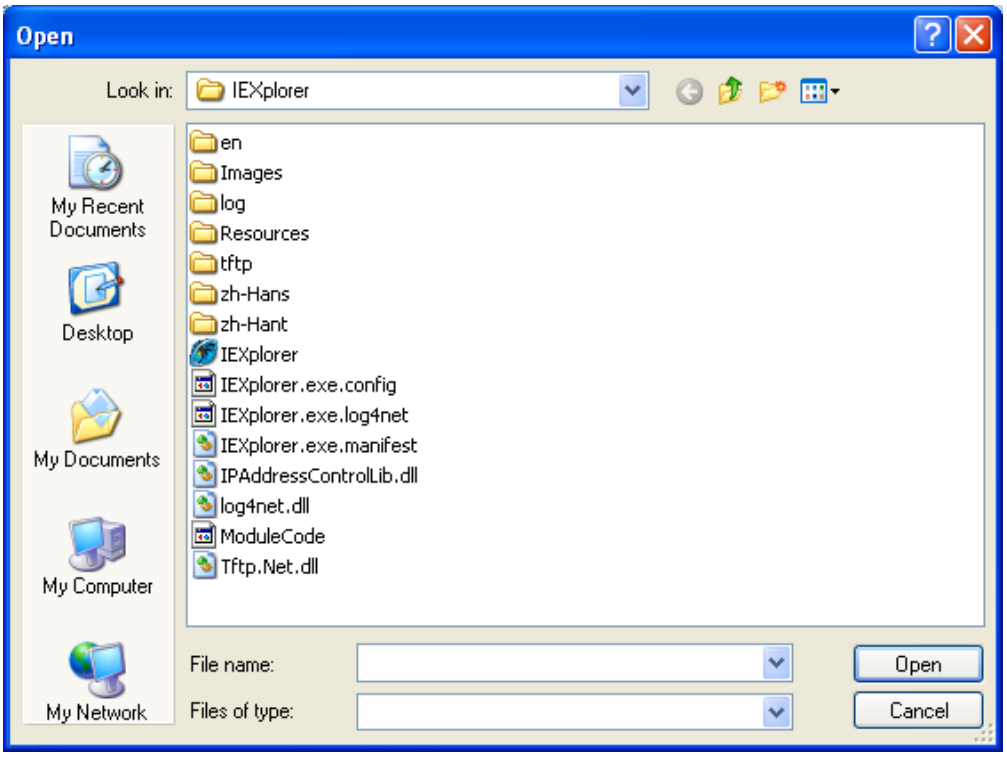
You can double-click the device in list view to open the configuration web page. If the device which you select doesn't belong to a DVS or DVW series device, then utility will open **DCISoft** for you to configure the device.

4.1.3 Tools

Please select the device before using the functions in **Tools** item.

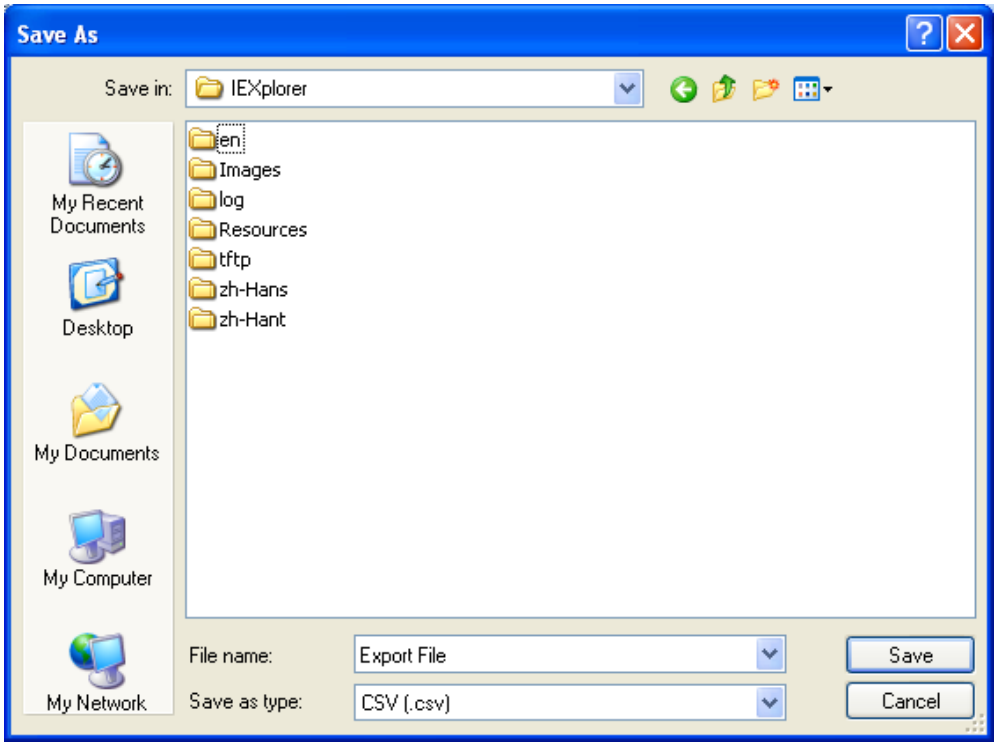
4.1.3.1 Parameter Import

After **Parameter Import** is selected, a window will pop up for you to select a file imported to the device. Importing a file to multi devices is supported.



4.1.3.2 Parameter Export

After **Parameter Export** is selected, a window will pop up for you to select the path to export the file.

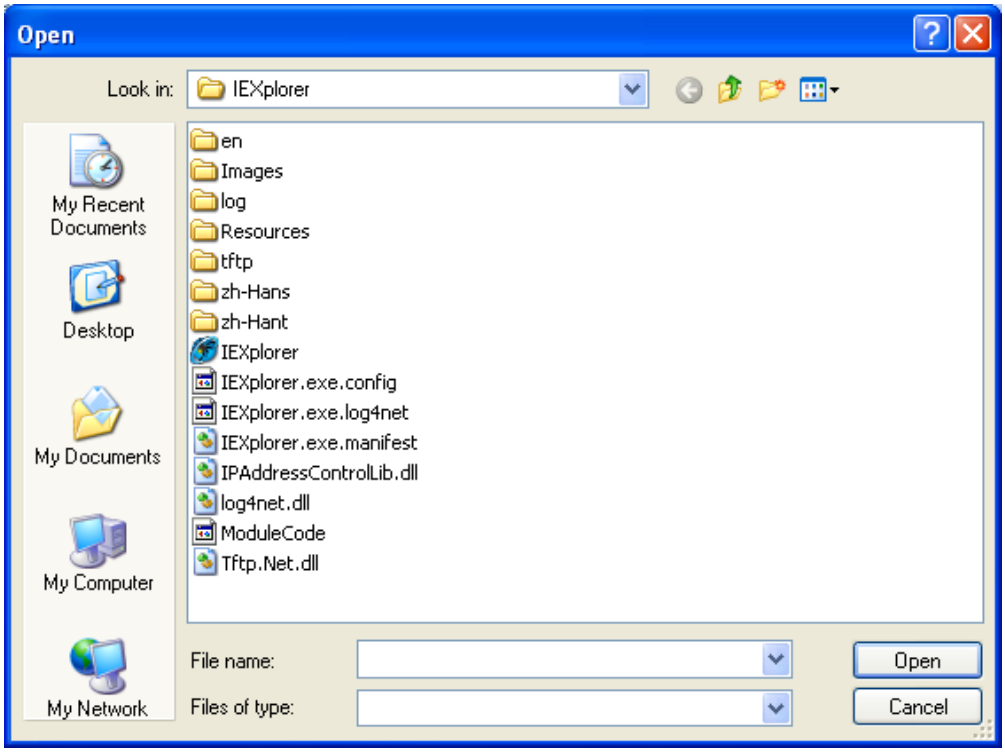


4.1.3.3 Device Reboot

IEXplorer supports you to reboot the device via utility.

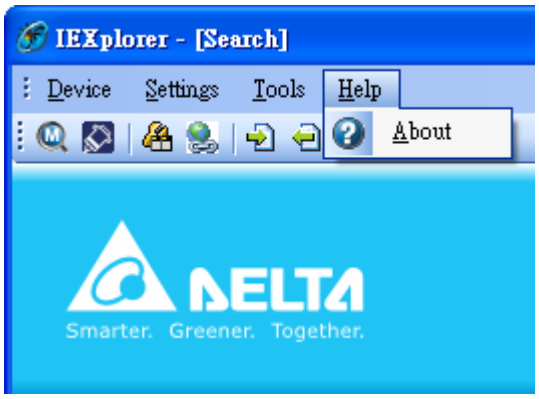
4.1.3.4 Update Firmware

After you select **Update Firmware**, a window will pop up for you to select the firmware file.



4.1.4 Help

After the **About** item in **Help** is selected, an information message window of IEXplorer will pop up.




about
IEXplorer
Version: 1.0.0.0
Release Date:9/2/2013
Copyright © 2013 Delta Electronics, Inc
All rights reserved
Internet: www.delta.com.tw
OK

Appendix A Private MIB Group

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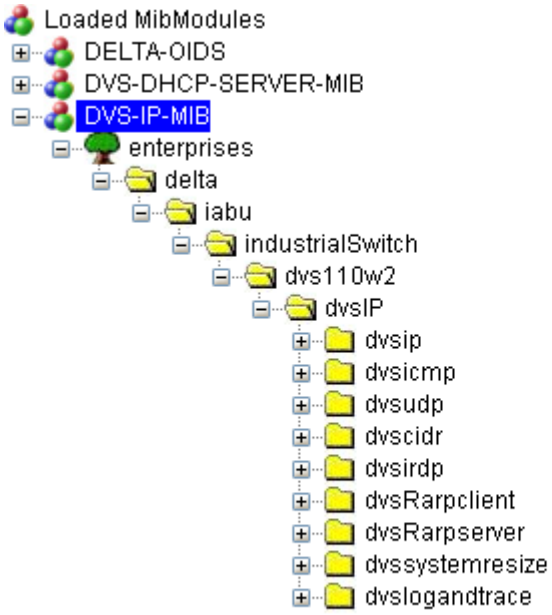
A.1 Private MIB Group

Delta switch not only support standard MIBs, it also provide private MIBs. You can use SNMP tool to configure or monitor the switch's configuration. The private MIBs are the same as standard MIBs, displays like a web tree. It's easily to understand and use, you don't need to learn or find where the OIDs of the commands are.

Private MIB can be found in product CD if you need to use it.



B

Appendix B MODBUS TCP Map

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B.1 MODBUS TCP Map

Address Offset	Data Type	Description
System Information		
0x0000	1 word	Reserved
0x0001	1 word	Reserved
0x0002	1 word	Reserved
0x0003	1 word	Firmware Version Hi byte = major Lo byte = minor
0x0004	2 word	Firmware Release Date Word 0 Hi byte = day Word 0 Lo byte = clock Word 1 Hi byte = year Word 1 Lo byte = month Ex: 20120918, PM9:00 Word 0 = 0x1215, Word 1 = 0x0C09
0x0010	20 words	Vendor Name = "Delta Electronics, Inc." Word 0 Hi byte = 'D' Word 0 Lo byte = 'e' Word 1 Hi byte = 'l' Word 1 Lo byte = 't' Word 2 Hi byte = 'a' Word 2 Lo byte = ' ' Word 3 Hi byte = 'E' Word 3 Lo byte = 'l' Word 4 Hi byte = 'e' Word 4 Lo byte = 'c' Word 5 Hi byte = 't' Word 5 Lo byte = 'r' Word 6 Hi byte = 'o' Word 6 Lo byte = 'n' Word 7 Hi byte = 'i' Word 7 Lo byte = 'c' Word 8 Hi byte = 's' Word 8 Lo byte = ', ' Word 9 Hi byte = ' ' Word 9 Lo byte = 'I' Word 10 Hi byte = 'n'
0x0010	20 words	Word 10 Lo byte = 'c' Word 11 Hi byte = '.' Word 11 Lo byte = '\0'

Address Offset	Data Type	Description
0x0030	20 words	Ex: Product Name = "DVW-W02W2-E2" Word 0 Hi byte = 'D' Word 0 Lo byte = 'V' Word 1 Hi byte = W' Word 1 Lo byte = '-' Word 2 Hi byte = 'W' Word 2 Lo byte = '0' Word 3 Hi byte = '2' Word 3 Lo byte = 'W' Word 4 Hi byte = '2' Word 4 Lo byte = '-' Word 5 Hi byte = 'E' Word 5 Lo byte = '2' Word 6 Hi byte = '\0' Word 6 Lo byte = '\0'
0x0050	20 words	Serial Number
0x0070	3 words	Ethernet MAC Address Ex: MAC = 00:11:22:33:44:55 Word 0 Hi byte = 0x00 Word 0 Lo byte = '0x11 Word 1 Hi byte = 0x22 Word 1 Lo byte = 0x33 Word 2 Hi byte = 0x44 Word 2 Lo byte = '0x55
0x0073	2 words	Ethernet IP Address Ex: IP = 192.168.1.5 Word 0 = 0xC0A8 Word 1 = 0x0105
0x0075	2 words	Ethernet Netmask Ex: Mask = 255.255.255.0 Word 0 = 0xFFFF Word 1 = 0xFF00
0x0077	2 words	Ethernet Gateway IP Address Ex: IP = 192.168.1.1 Word 0 = 0xC0A8 Word 1 = 0x0101
0x0080	1 word	Power 1 Status 0x0000: OFF 0x0001: ON
0x0081	1 word	Power 2 Status 0x0000: OFF 0x0001: ON
0x0090	1 word	DO 1 Status 0x0000: OFF 0x0001: ON
0x00A0	1 word	DI 1 Status 0x0000: OFF 0x0001: ON

Address Offset	Data Type	Description
Ethernet Port Information		
0x1000 ~ 0x1001	1 word	Port 1 to 2 Status 0x0000: Link down 0x0001: Link up 0xFFFF: No port
0x1100 ~ 0x1101	1 word	Port 1 to 2 Communication Format 0x0000: 10M-Half 0x0001: 10M-Full 0x0002: 100M-Half 0x0003: 100M-Full 0x0004: 1000M 0xFFFF: No port
0x1200 ~ 0x1201	1 word	Port 1 to 2 Flow Control 0x0000: OFF 0x0001: ON 0xFFFF: No port
Ethernet Packet Information		
0x2000 ~ 0x2003	2 words	Port 1 to 2 Tx Packets Ex: Port 1 Tx Packet Amount = 0x33221100 0x2000 = 0x3322 0x2001 = 0x1100
0x2100 ~ 0x2103	2 words	Port 1 to 2 Rx Packets Ex: Port 1 Rx Packet Amount = 0x33221100 0x2100 = 0x3322 0x2101 = 0x1100
0x2200 ~ 0x2203	2 words	Port 1 to 2 Tx Error Packets Ex: Port 1 Tx Packet Amount = 0x33221100 0x2200 = 0x3322 0x2201 = 0x1100
0x2300 ~ 0x2303	2 words	Port 1 to 2 Rx Error Packets Ex: Port 1 Rx Packet Amount = 0x33221100 0x2300 = 0x3322 0x2301 = 0x1100
Serial Port Information		
0x3000 ~ 0x3003	2 words	Port 1 to 2 Tx Packets Ex: Port 1 Tx Packet Amount = 0x33221100 0x3000 = 0x3322 0x3001 = 0x1100
0x3100 ~ 0x3103	2 words	Port 1 to 2 Rx Packets Ex: Port 1 Rx Packet Amount = 0x33221100 0x3100 = 0x3322 0x3101 = 0x1100
0x3200 ~ 0x3203	2 words	Port 1 to 2 Tx Error Packets Ex: Port 1 Tx Error Packets Amount = 0x33221100 0x3200 = 0x3322 0x3201 = 0x1100
0x3300 ~ 0x3303	2 words	Port 1 to 2 Buffer Size in use Ex: Port 1 Buffer Size = 0x33221100 0x3300 = 0x3322 0x3301 = 0x1100

Address Offset	Data Type	Description
WLAN Port Information		
0x4000	1 word	WLAN Operation mode 0x0000: AP mode 0x0001: Client mode 0x0002: WLAN bridge (point to point) 0x0003: Wireless distribution system (point to multipoint) 0x0004: Repeater mode
0x4100	1 words	WLAN Transmission mode 0x0000: Auto 0x0001: 802.11a 0x0002: 802.11b 0x0003: 802.11g 0x0004: 802.11n
Alarm		
0x5000	1 word	Cold start alarm 0x0000: OFF 0x0001: ON 0xFFFF: Disable
0x5001	1 word	Warm start alarm 0x0000: OFF 0x0001: ON
0x5003	1 word	LAN link up alarm 0x0000: OFF 0x0001: ON
0x5004	1 word	Power state on alarm 0x0000: OFF 0x0001: ON
0x5005	1 word	Power state off alarm 0x0000: OFF 0x0001: ON
0x5006	1 word	DI on alarm 0x0000: OFF 0x0001: ON
0x5007	1 word	DI off alarm 0x0000: OFF 0x0001: ON
0x5008	1 word	authentication failure alarm 0x0000: OFF 0x0001: ON
0x5009	1 word	dot1d Bridge New Root alarm 0x0000: OFF 0x0001: ON
0x500A	1 word	dot1d Bridge Topology Changed alarm 0x0000: OFF 0x0001: ON
0x500C	1 word	Configuration Changed alarm 0x0000: OFF 0x0001: ON
0x500D	1 word	Firmware update alarm 0x0000: OFF 0x0001: ON

Address Offset	Data Type	Description
0x500E	1 word	IP changed alarm 0x0000: OFF 0x0001: ON
0x500F	1 word	Password changed alarm 0x0000: OFF 0x0001: ON
0x5016	1 word	DCD change alarm 0x0000: OFF 0x0001: ON
0x5019	1 word	DSR change 0x0000: OFF 0x0001: ON
IABU Internal Data (0x2B)		
Device ID Code	**Object ID**	**Description**
0x01	0x00	Vendor Name "Delta Electronics, Inc."
	0x01	Product Code "DVW-W02W2-E2"
	0x02	Firmware Version Major.Minor Example: Major = 1, Minor = 2, Length = 4 Data byte 0: "31" Data byte 1: "." Data byte 2: "30" Data byte 3: "32"