



Aolynk S1505L Smart Ethernet Switch

User Manual

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CE

This equipment complies with the following European Directives: 89/336/EEC (electromagnetic compatibility), 73/23/EEC (low voltage).

About This Manual

Purpose

This document is used to guide you through installing, configuring, maintaining and managing this product. Please read it carefully before your operation.

Intended Audience

This document is intended for network administrators who know well of the basic network knowledge and network terms.

Organization

This document is organized as follows:

| Chapter | Content |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------|
| 1 Product Overview | This chapter describes the appearance and features of the Aolynk S1505L Smart Ethernet Switch. |
| 2 Installation | This chapter describes the precautions and steps to install the Aolynk S1505L Smart Ethernet Switch. |
| 3 Configuration | This chapter describes the interfaces of the configuration program and how to configure the Aolynk S1505L Smart Ethernet Switch. |

| Chapter | Content |
|---------------------------------------|-------------------------------------------------------------------------------------------------|
| 4 Appendix – Technical Specifications | This chapter describes the technical specifications of the Aolynk S1505L Smart Ethernet Switch. |

Conventions

The manual uses the following conventions:

I. GUI conventions

| Convention | Description |
|------------|-----------------------------------------------------------------------------------------------------------------------------|
| < > | Button names are inside angle brackets. For example, click <OK>. |
| [] | Window names, menu items, data table and field names are inside square brackets. For example, pop up the [New User] window. |
| / | Multi-level menus are separated by forward slashes. For example, [File/Create/Folder]. |

II. Symbols



| Convention | Description |
|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
|  Caution | Means reader be careful. Improper operation may cause data loss or damage to equipment. |
|  Note | Means a complementary description. |

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Chapter 1 Product Overview

Aolynk S1505L Smart Ethernet Switch (hereinafter referred to as the S1505L) is oriented to small and medium-sized enterprise users and SOHO users for IPTV application. It provides five autosensing 10/100Base-TX Ethernet ports:

- Uplink port: Connected to carrier network
- VoIP port: Connected to IP phone
- TV port: Connected to IPTV set-top box
- PC port: Connected to PC
- EXP port: Expansion port (which can be used as the console port)

1.1 Appearance

I. Front panel

Figure 1-1 shows the LEDs on the front panel of the S1505L: a power LED, pairs of speed and Link/Act LEDs, with each pair corresponding to one Ethernet port.

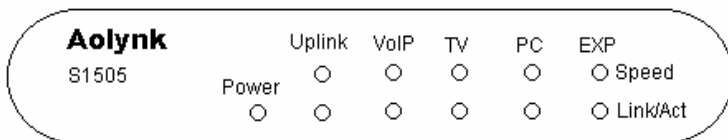


Figure 1-1 Front panel

Table 1-1 LED description

| LED | Label | State | Description |
|-------|----------|----------------|-------------------------------------------------------------------|
| Power | Power | Green | The S1505L is powered on. |
| | | OFF | The S1505L is powered off. |
| Speed | Speed | Green | The port is operating at 100 Mbps. |
| | | OFF | The port is operating at 10 Mbps, or no Ethernet link is present. |
| State | Link/Act | Green | An Ethernet link is established. |
| | | OFF | No Ethernet link is present. |
| | | Blinking green | Data is being transmitted and/or received on the port. |

II. Rear panel

Figure 1-2 shows the rear panel of the S1505L. On this panel, there are five autosensing 10/100Base-TX Ethernet ports, one Reset button (unavailable for the S1505L), and one power jack.

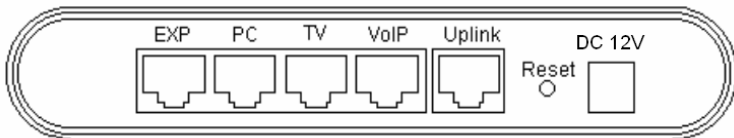


Figure 1-2 Rear panel

1.2 Features

Table 1-2 Feature description

| Feature | Description |
|------------------------------------------|------------------------------------------------------------------------------------------------------|
| VLAN (virtual local area network) | IEEE 802.1Q-compliant VLAN Port-based VLAN 16 VLANs at most |
| Port | Broadcast storm control Flow control, compliant with 802.3x |
| MAC (media access control) address table | Address learning, with default address aging time of 300 seconds Maximum MAC address entries: 2 K |
| Management | Management via configuration program |
| QoS (quality of service) | 802.1p priority queue Four priority queues per port Rate limit on each port |

Chapter 2 Installation

2.1 Precautions

- Before cleaning the S1505L, pull out its power adapter. Do not clean the S1505L with wet cloth or liquid.
- Do not place the S1505L near water or in a damp area. And prevent water or moisture from entering the S1505L chassis.
- Keep the working environment of the S1505L clean, for dusty environment may cause electrostatic adsorption, which may not only shorten the life of the device, but also incur communication failures.
- The S1505L use air cooling approach for they just generate a small amount of heat. Reserve more than 10 cm (4 in.) of clearance around the S1505L for heat dissipation.
- Make sure that the supply voltage is consistent with that labeled on the S1505L. It is strongly recommended that you use the power adapter accompanying the S1505L for the power supply.
- Keep the S1505L far away from powerful radio transmitters, radars and high-frequency devices working in high current.
- Take electromagnetic shielding measures if necessary. For example, you can adopt shielded interface cable.
- Wire the interface cable indoors (outdoor wiring is not permitted) to prevent the signal ports of the device from damage due to over-voltage and over-current caused by thunder.

2.2 Hardware Installation

I. Connect the cable

As shown in Figure 2-1, you can use the console cable to connect a PC to the S1505L. This cable takes an RJ-45 connector at one end and a USB connector at the other end.

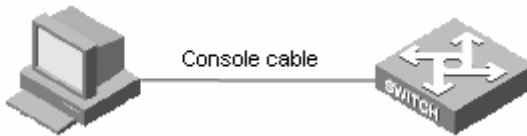


Figure 2-1 PC connection

- 1) Plug the USB connector of the console cable into the USB port of the PC that will be used to configure the S1505L.
- 2) Plug the RJ-45 connector of the console cable into the EXP port of the S1505L.

II. Connect the power adapter

- 1) Attach one end of the power adapter to the power jack of the S1505L and the other end to the external power socket.
- 2) Check the state of the Power LED. ON indicates the S1505L is powered normally.

2.3 USB Driver Installation

After the above connections are completed, you must install the USB driver on the PC according to the following procedure:

- 1) After you plug the USB connector, the [Found New Hardware Wizard] dialog box (see Figure 2-2) pops up, prompting you that a new hardware is found.



Figure 2-2 Found New Hardware Wizard dialog box

- 2) Select the **Install from a list or specific location [Advanced]** option in the above dialog box (see Figure 2-2) and click <Next> to proceed.

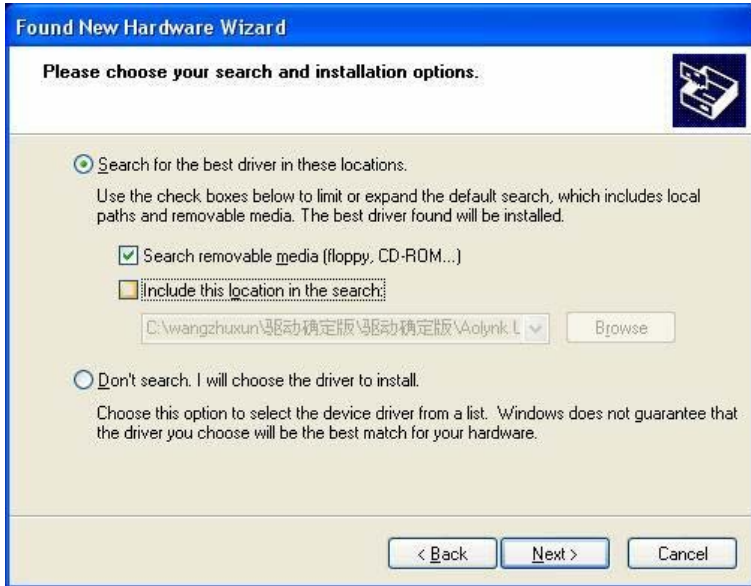


Figure 2-3 Select the locations for searching the driver

- 3) Insert the driver CD-ROM into the drive of your PC. Select the **Search removable media [floppy, CD-ROM...]** check box and click <Next>.
- 4) Click <Continue Anyway> to ignore the Microsoft logo test and start the installation. After the installation, the [Completing the Found New Hardware Wizard] dialog box (see Figure 2-4) pops up.



Figure 2-4 Complete the installation

- 5) Click <Finish> to complete the installation.

Chapter 3 Configuration

You can use the configuration program in the CD-ROM accompanying the S1505L to configure and manage the S1505L. After the hardware connection and USB driver installation, you can run the configuration program on the PC and make a connection to the S1505L for further operation.

3.1 Login

Run the configuration program and the [Login] dialog box (see Figure 3-1) pops up. Type in the password (**admin** by default, which you can change after logging in) in the [Password] field. Click <OK> to enter the main configuration window of the S1505L.



Figure 3-1 Login dialog box

Note:

The default user name **Admin** is unchangeable, but you can change the password after logging into the configuration page. Refer to section 3.5 “Changing Password” for details.

3.2 Main Configuration Window

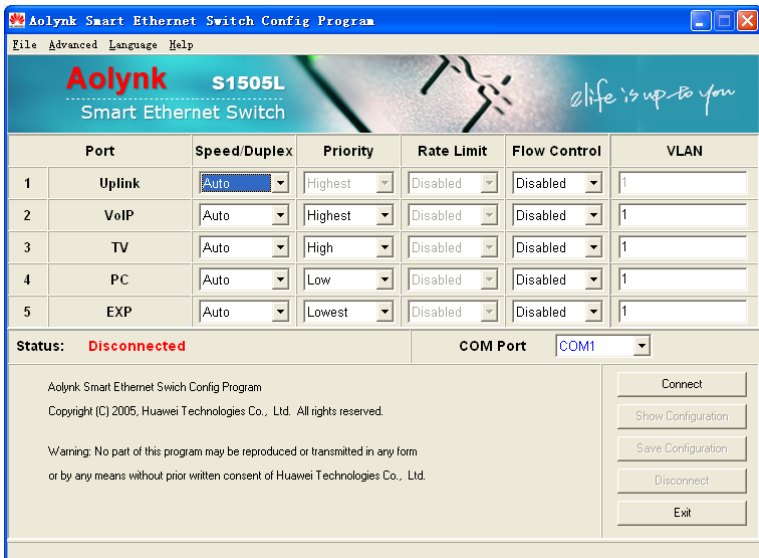


Figure 3-2 Main configuration window (in disconnected status)

After you log into the S1505L configuration page, click <Connect> and the program automatically searches for the COM port that is connected to the S1505L to make a connection with the S1505L. Once the connection is set up, the [Status] field displays **Connected**

on the page and the exact port is displayed in the [COM Port] field (see Figure 3-3).

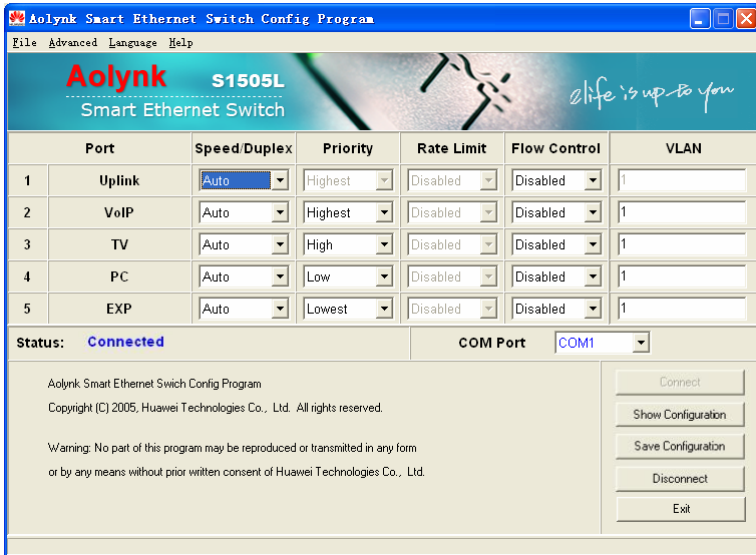


Figure 3-3 Main configuration window (in connected status)

I. Quick setup section

The quick setup section allows you to set the S1505L quickly. In this section, you can set the speed, priority, rate limit, flow control, and VLAN for each port. The Port column of this section indicates the relationship between the port names and their sequence numbers. To perform the advanced VLAN configuration, you must have knowledge about this.

- **Speed/Duplex:** Select the speed for the port from the drop-down list. Six options are available: Auto (default), 100 Full, 100 Half, 10 Full, 10 Half, Disabled. When **Auto** is

selected, the switch automatically negotiates an operating speed and duplex mode with the peer port.

- **Priority:** Four options are available from the drop-down list: Highest, High, Low and Lowest. You cannot configure the priority for the Uplink port. By default, the priorities for the VoIP, TV, PC, and EXP ports are arranged in descending order, that is, from the Highest (VoIP) to the Lowest (EXP).
- **Rate Limit:** Port-based rate limit. This feature controls the packet receiving and transmitting rates on the port and is disabled by default. To enable the feature, choose [Advance/Advanced Settings] to enter the [Advanced Settings] dialog box and make configurations on the [General] tab page. For details, refer to section 3.4 "I. General settings". Once enabled, nine options are available in the drop-down list: 64K, 128K, 256K, 512K, 1M, 2M, 4M, 8M and Disabled.
- **Flow Control:** This feature controls the packets received and sent on each port to prevent packet loss and is commonly used for congestion management. There are two available options: **Enabled** and **Disabled** (default).
- **VLAN:** You can type in the VLAN ID to create a VLAN containing both this port and the Uplink port. By default, all the ports have the VLAN ID of 1 and belong to the same VLAN, and the Uplink port is tagged.

II. Buttons

- **<Connect>:** Click this button to make the program automatically search for the communication port that is

connected to the S1505L to make a connection with the S1505L.

- <Show Configuration>: Click this button to display the current configuration of the S1505L.
- <Save Configuration>: Click this button to save your configuration to the S1505L. This operation will cause the S1505L to restart. Your configuration takes effect only after you save them.
- <Disconnect>: Click this button to disconnect the S1505L from the configuration program.
- <Exit>: Click this button to exit the configuration program.



Caution:

Every time you run the configuration program, the main configuration window shows the factory default settings. At this time, if you click <Save Configuration>, the S1505L will be restored to the factory default settings. Therefore, once you have run the configuration program, you are recommended to click <Show Configuration> first to get the configurations of the S1505L, and then make changes.

III. Menus

- [File]: [Open Configuration] allows you to open the configuration file that you have saved on the PC. [Save Configuration] allows you to save the configuration on the S1505L to the PC. When configuring multiple S1505Ls, you

only need to configure one and choose [File/Save Configuration] to save the configuration to a file. Then you can just choose [File/Open Configuration] to open the saved configuration file and click <Save Configuration> on the main configuration window to configure other S1505Ls.

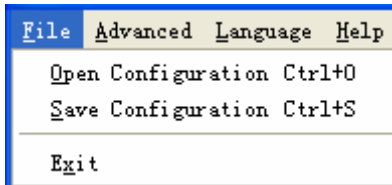


Figure 3-4 File menu items

- [Advanced]: [Advance Settings] allows you to perform advanced configuration of VLAN, including the selection between port-based VLAN and 802.1Q-based VLAN, the settings of rate limit, broadcast storm control and priority weight, and so on. [Change Password] allows you to modify the password.

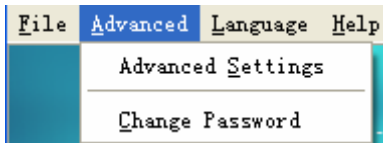


Figure 3-5 Advanced menu items

- [Language]: [Language] allows you to shift between English and Chinese.

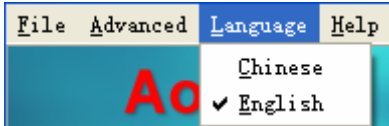


Figure 3-6 Language menu items

- [Help]: [About] provides you with the version and copyright information about the S1505L configuration program.

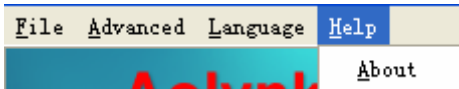


Figure 3-7 Help menu items

3.3 Quick Setup

The following four steps guide you through the quick setup of the S1505L on the main configuration window:

- 1) Click <Connect> and the program automatically searches for the COM port connected to the S1505L to make a connection with the S1505L. Once **connected** is displayed, you can configure the S1505L.
- 2) Click <Show Configuration> to display the current configurations of the S1505L.
- 3) To set VLAN, type in a VLAN ID assigned by the carrier in the corresponding [VLAN] text box of each port according to the actual networking, creating a VLAN which contains both this port and the Uplink port which is tagged by default.

- 4) Click <Save Configuration> to save the configuration to the S1505L. The switch automatically restarts and the configuration takes effect.

 **Note:**

- VLAN 1 is the default VLAN including all the ports.
 - A VLAN ID ranges from 1 to 4094.
 - To set the VLAN type, choose [Advanced/Advanced Settings] and enter the [General] tab page to make a selection from the [VLAN Type] drop-down list. The default VLAN type is 802.1Q-based.
 - You can set the speed, priority, rate limit, and flow control from the corresponding drop-down lists in the quick setup section. The S1505L operates normally with the default settings, so generally you do not need to change the default ones.
-

3.4 Advanced Settings

You can make advanced settings of the S1505L by choosing [Advanced/Advanced Settings] to enter the [Advanced Settings] page.

I. General settings

Choose [Advanced/Advanced Settings] and select the [General] tab to enter the [general] tab page, as shown in Figure 3-8.

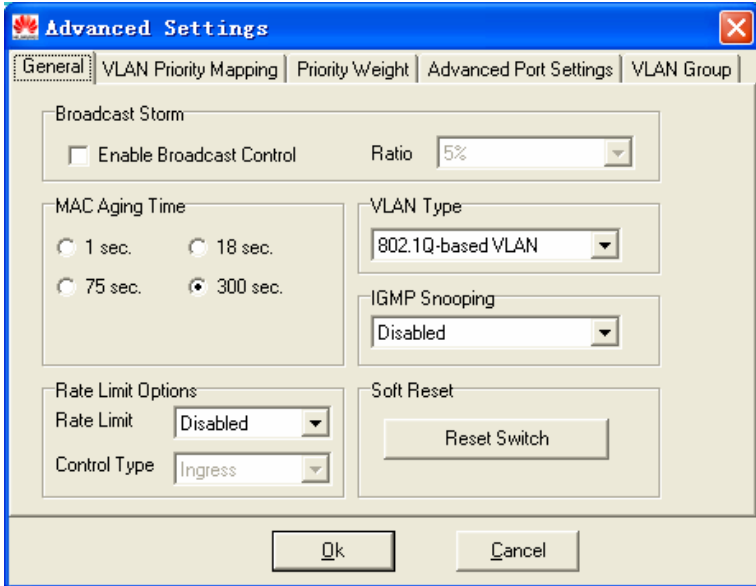


Figure 3-8 General tab page

- **Broadcast Storm:** Limit the broadcast traffic on the port. When the broadcast traffic exceeds the customer-defined value, the system drops the broadcast packets to reduce the broadcast ratio to a reasonable value. This efficiently controls the broadcast storm and ensures the network services. To enable the function, select the [Enable Broadcast Control] check box. Four options are available, 5%, 10%, 20%, or 100%, from the [Ratio] drop-down list. 100% means broadcast storm is not controlled. This feature is disabled by default.
- **MAC Aging Time:** Four options are available, 1 sec., 18 sec., 75 sec., and 300 sec. (default).

- VLAN Type: Two options are available, 802.1Q-based VLAN (default) and Port-based VLAN.
- IGMP Snooping: A multicast control mechanism running on Layer 2 switch. It is used for multicast group management and control. Based on source address learning, the switch learns the MAC address. When the layer 2 switch receives multicast packets and cannot judge whether they are multicast or not, the switch processes them as broadcast. Thus the multicast takes no effect. However, when IGMP Snooping runs, multicast packet is not broadcast on Layer 2. By default, this feature is disabled.
- Rate Limit Options: Two options are available, Enabled and Disabled (default). If you enable rate limit, you can select the **Ingress**, **Egress**, or **both** option from the [Control Type] drop-down list.
- Soft Reset: Click <Reset Switch> and the S1505L restarts. Note that you should save current configuration to the S1505L before clicking this button; otherwise, the changes you make will not take effect.

II. VLAN priority mapping

Choose [Advanced/Advanced Settings] and select the [VLAN Priority Mapping] tab to enter the [VLAN Priority Mapping] tab page, as shown in Figure 3-9. In this page, you can map the priorities of VLAN tag to corresponding priority queues.

The S1505L supports four priority queues for each port, that is, highest, high, low, and lowest queues. It places an Ethernet frame into a corresponding output queue based on the priority of the VLAN tag in the frame. The frames in the queue with higher priority will be sent in

precedence. By default, the mapping is as follows: 0 and 1 are mapped to the lowest queue, 2 and 3 to low, 4 and 5 to high, 6 and 7 to highest.

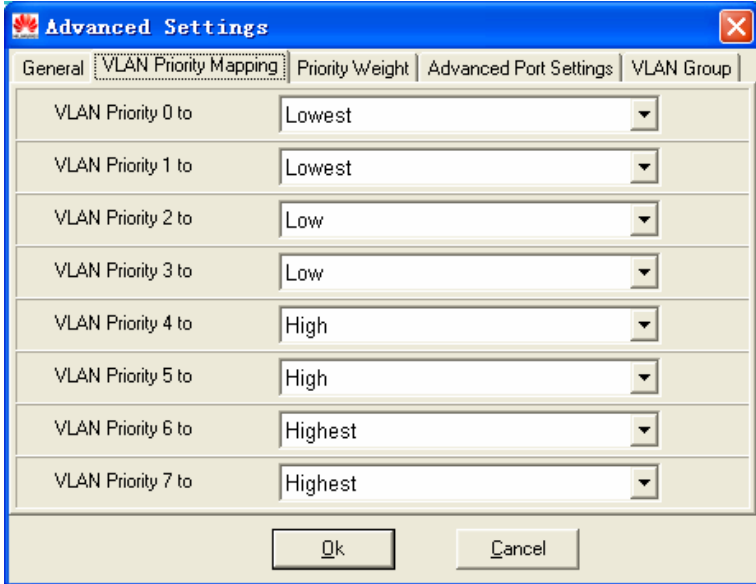


Figure 3-9 VLAN Priority Mapping tab page

III. Priority weight

Choose [Advanced/Advanced Settings] and select the [Priority Weight] tab to enter the [Priority Weight] tab page, as shown in Figure 3-10. In this page, you can configure the weights of priority queues.

The S1505L supports four priority queues for each port and performs polling based on the priority weights of the queues. The queues can be set to different weights; so that different service qualities are provided for different requirements. By default, the

weights of the four priority queues are in the ratio of 1:2:4:8. The weight of the lowest queue is 1, which cannot be changed, and weights of other queues ranges from 1 to 15.

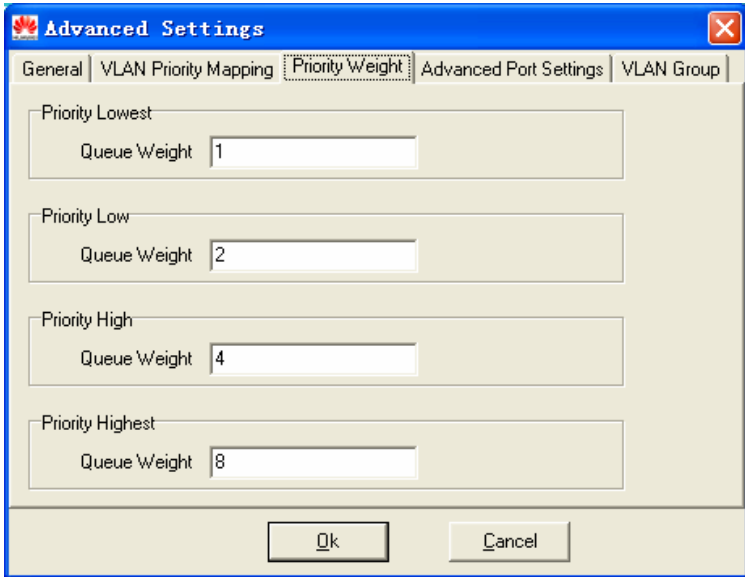


Figure 3-10 Priority Weight tab page

IV. Advanced port settings

Choose [Advanced/Advanced Settings] and select the [Advanced Port Settings] tab to enter the [Advanced Port Settings] tab page, as shown in Figure 3-11. In this page, you can perform more configurations on the ports of the S1505L.

- **Ingress Filter:** The S1505L checks the VLAN ID of the packets on the ingress port. For instance, if you enable the feature by selecting the [Ingress Filter] check box for port 2 which does not belong to VLAN 100, the switch drops the

packets with VLAN ID of 100 arriving at port 2. By default, ingress filter is enabled.

- PVID: Used to display and configure the PVID of each port. By default, the PVIDs displayed here are the same as the VLAN IDs on the main configuration window.

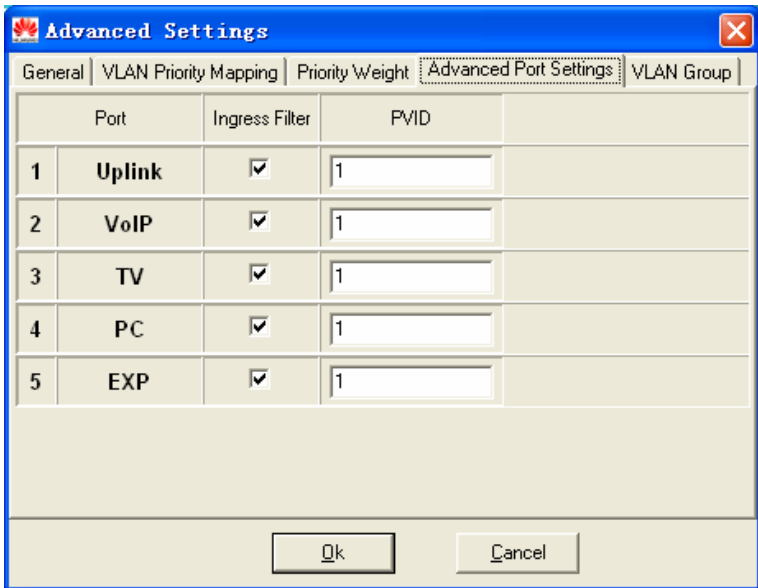


Figure 3-11 Advanced Port Settings tab page

V. VLAN

Choose [Advanced/Advanced Settings] and click [VLAN] to enter the [VLAN] tab page, as shown in Figure 3-12.

The VLAN management involves creating, editing and deleting VLAN. The management of 802.1Q-based VLAN differs from that of port-based VLAN. Therefore, you should select the required VLAN

type on the [General] tab page before configuring the VLANs. By default, this type is 802.1Q-based VLAN.

1) 802.1Q-based VLAN

Section 3.3 “Quick Setup” describes how to create an 802.1Q-based VLAN: Type in the VLAN ID in the corresponding VLAN text box of a port on the quick setup section of the main configuration window. For instance, after you have created VLAN 10, VLAN 20, VLAN 30, and VLAN 40 for the VoIP, TV, PC, EXP ports respectively, these VLANs are shown in Figure 3-12. The information on the [VLAN] tab page represents the configuration you have made on the main configuration window.

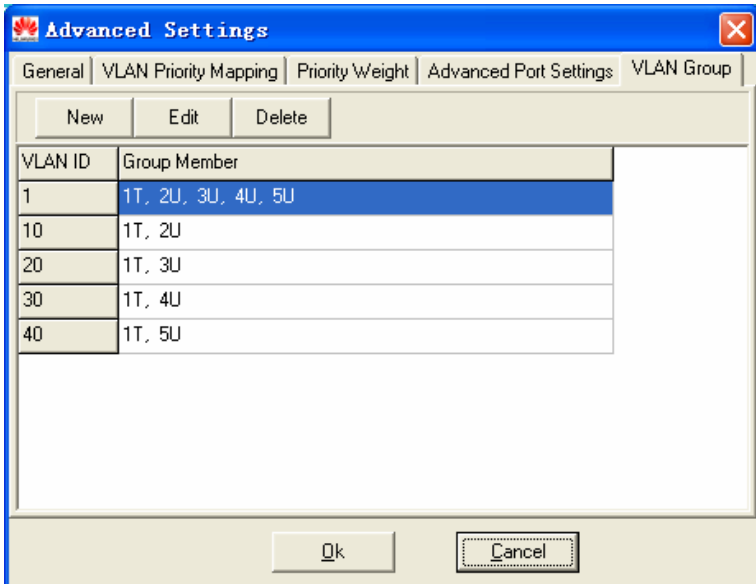


Figure 3-12 802.1Q-based VLAN configuration

- Create a VLAN

To create a VLAN, click <New> on the [VLAN] tab page (see Figure 3-12) to enter the [VLAN Member Settings] dialog box (see Figure 3-13).

| | Port | Group Member | Tag |
|---|--------|-------------------------------------|----------|
| 1 | Uplink | <input checked="" type="checkbox"/> | Tagged |
| 2 | VoIP | <input type="checkbox"/> | Untagged |
| 3 | TV | <input type="checkbox"/> | Untagged |
| 4 | PC | <input type="checkbox"/> | Untagged |
| 5 | EXP | <input type="checkbox"/> | Untagged |

Figure 3-13 Create a VLAN

Type in a VLAN ID in the corresponding text box. Select any [Member] check box to add the corresponding port to this VLAN, and then select the **Tagged** or **Untagged** option from the corresponding drop-down list.

- Edit a VLAN

To edit an existing VLAN, click <Edit> on the [VLAN] tab page (see Figure 3-12) to enter the [VLAN Member Settings] dialog box (see Figure 3-14).



Figure 3-14 Edit a VLAN

In this dialog box, you can remove or add members of the VLAN and change the tag attribute of each port, but you cannot change the VLAN ID.

- Delete a VLAN

To delete a VLAN, select the [Member] box corresponding to the VLAN in the [Advanced Settings] dialog box (see Figure 3-12), click <Delete>, and confirm. Then the VLAN is deleted.



Caution:

VLAN 1 is the default VLAN, which includes all the ports and cannot be deleted.

2) Port-based VLAN

You can create port-based VLAN as needed. First you need to set the VLAN type to port-based VLAN in Figure 3-8. Then choose [Advanced/Advanced Settings] and select the [VLAN] tab to enter the corresponding dialog box (see Figure 3-15).

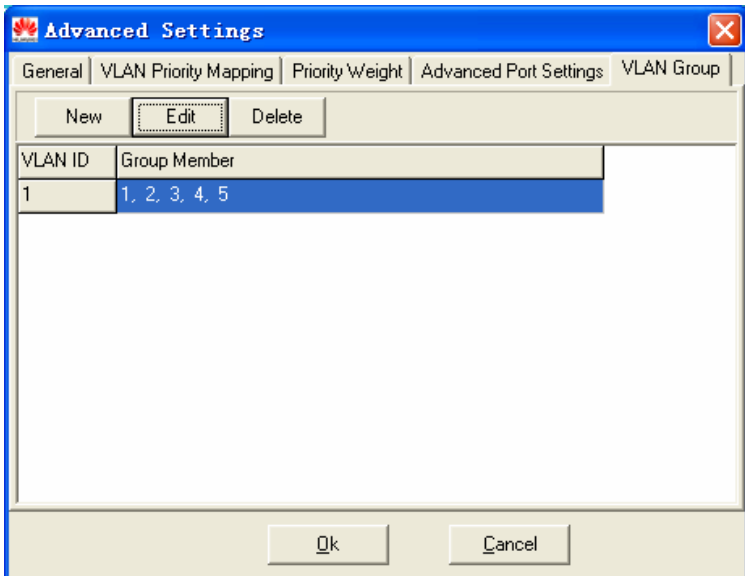


Figure 3-15 Port-based VLAN configuration

By default, VLAN 1 includes all the ports. You can only create a VLAN that includes port 1 and port 5. Click <New> and you may begin your creation. If you need to remove or add some ports in the VLAN, click <Edit>. You can click <Delete> to delete a VLAN, but when there is only one VLAN left, the last VLAN becomes the default VLAN and you cannot delete it.



Caution:

Changing the VLAN type may cause clearing all the VLAN settings before.

Port 1 (Uplink) and port 5 (EXP) can be added to multiple VLANs, While other ports can only be added to a VLAN.

3.5 Changing Password

Choose [Advance/Change Password] to enter the [Change Password] dialog box, as shown in the following figure. To change the password, type in the old password, a new password, and the new password again. Then click <OK>.



Figure 3-16 Change Password dialog box



Caution:

The password is from 4 to 12 characters in length (case sensitive) and cannot be left blank.

3.6 About

Choose [Help/About] to view the version and copyright information about the S1505L configuration program.

Chapter 4 Appendix – Technical Specifications

Table 4-1 Technical specifications

| Item | Description |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ports | Five autosensing 10/100Base-TX Ethernet ports |
| Port attributes | RJ-45 connector Compliant with IEEE 802.3, IEEE 802.3u, and IEEE 802.3x 10/100 Mbps transmission rate Half duplex, full duplex and auto-negotiation Auto-MDI/MDIX |
| Cable | 10Base-T: Category 3/4/5 shielded twisted pair (STP) with the maximum transmission distance of 100 m (328 ft) 100Base-TX: Category 5 STP with the maximum transmission distance of 100 m (328 ft) |
| Physical dimensions (H × W × D) | 34 × 150 × 110 mm (1.3 × 5.9 × 4.3 in) |
| Weight | 300 g (10.6 oz) |
| Input voltage | 12 VDC |

| Item | Description |
|------------------------------------|--------------------------------|
| Power consumption | 4.5 W |
| Operating temperature | 0°C to 40°C (32°F to 104°F) |
| Storage temperature | -10°C to +70°C (14°F to 158°F) |
| Operating humidity (noncondensing) | 20% to 85% |
| Storage humidity (noncondensing) | 10% to 90% |
| System cooling | Air cooling |

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