

FCC Certifications



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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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.

CE Mark Warning



This equipment complies with the requirements relating to electromagnetic compatibility, EN 55022 class A for ITE, the essential protection requirement of Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

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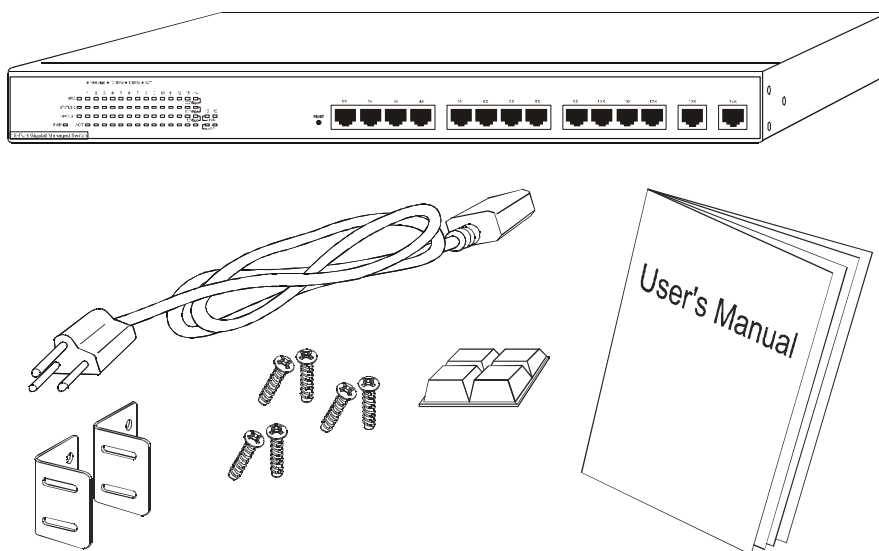
5. Product Specifications

1. Unpacking Information

Thank you for purchasing the 14+2 Gigabit Smart Switch. Before you start, please check all the contents of this package.

The product package should include the following:

1. One 14+2 Gigabit Smart Switch
2. One power cord
3. Rubber foot and screws
4. Rack-mount brackets
5. User's Manual



2. Introduction to 14+2 Gigabit Smart Switch

2.1 General Description

The device is a 14+2-port 10/100/1000Mbps Ethernet Smart switch with 14 Gigabit RJ-45 ports and 2 Gigabit slide-in slots on the rear panel for optional fiber/copper Gigabit modules.

Compare to the traditional 10/100Mbps Ethernet, the switch delivers a dedicated Gigabit connection to every attached client with no congestion issue. The gigabit ports also provide the fat pipe to the server or backbone connectivity for boosting the total system performance. Moreover, the NWay auto-negotiation operation automatically negotiates with the connected partners on the network speed and duplex mode; that provides an easy way to integrate 10/100/1000Mbps networks with no pain. It is ideal for micro-segmenting large networks into smaller, connected subnets for improved performance, enabling the bandwidth demanding multimedia and imaging applications.

Out of the ordinary dumb switches, the 14+2 Gigabit Smart Switch embedded advanced management capability; that the device can be remote managed by Telnet and Internet browser. This is much useful for system manager to monitor and control the system efficiently. The 2 Gigabit slide-in slots on the rear panel provide fat pipes for up linking to backbone or connecting to servers. Both RJ-45 and Fiber SC modules are the solution to fit your existing network and flexible media selectivity.

Store-and-forward switching mode promises the low latency plus eliminates all the network errors, including runt and CRC error packets. To work under full-duplex mode, transmission and reception of the frames can occur simultaneously without causing collisions as well as double the network bandwidth.

The switch is plug-n-play without any software to configure and also fully compliant with all kinds of network protocols. Moreover, the rich diagnostic LEDs on the front-panel provide the operating status of individual port and whole system.

2.2 Key Features

- Complies IEEE 802.3, IEEE 802.3u, IEEE802.3x, IEEE 802.3z/ab standards
- Complies with IEEE802.1Q VLAN tag (IVL)
- 14 * 10/100/1000Mbps RJ-45 ports
- 2 * 1000Mbps Copper/Fiber slide-in slots (for optional module)
- Every switching port is automatically cross-over detection (MDI/MDI-X auto-detected)
- Supports 8MB SDRAM for run time data storage
- Supports 2MB Flash EPROM for cooperation and configuration data storage
- Supports port sniffing
- Supports Port Aggregation and up to 8 groups
- Supports 802.1Q VLAN and up to 255 groups
- One RS-232 female console connector
- Supports 4K MAC entries
- Supports 2Mbit packet switching
- 19" rack mountable
- Internal universal switching power supply
- FCC Class A, CE

2.3 The Front Panel

The front panel of the switch is shown as below



Port Operation

There are 14 * 1000Mbps RJ-45 (copper) ports on the front panel. The auto-negotiation feature of the switch allows each port of the device running at one of the following operation modes:

Speed	Duplex Mode
10Mbps	Full Duplex
	Half Duplex
100Mbps	Full Duplex
	Half Duplex
1000Mbps	Full Duplex

All ports supports MDI/MDI-X **auto crossover** capability that is the port can connect either the PC or hub without crossover cable adjustment.

Wiring for 10/100/1000Mbps (Copper)

Following are the summaries of cabling required:

Media	Speed	Wiring
10/100/1000Mbps copper	10Mbps	Category 3,4,5 UTP/STP
	100Mbps	Category 5 UTP/STP
	1000Mbps	Category 5 UTP/STP

Attention : Category 5 or enhanced cable is preferred to use with this product in structured wiring environments. This will ensure correct operation of RJ-45 ports at 10Mbps, 100Mbps or 1000Mbps.

LEDs Definition

The rich diagnostic LEDs on the front panel can provide the operating status of individual port and whole system.

Power LED

This indicator lights green when the switch is receiving power; otherwise, it is off.

Alive LED

After booting the switch, the LED will blink periodically to show the switch is active. If the LED stays green/dark that means the system is idling, you need to contact your agent or try to reboot the system.

STATUS 0 LED

After Power On Self Test (POST), this LED lights green to indicate the system has passed POST and running normally; otherwise, it will be dark.

STATUS 1 LED

The “STATUS 1” LED Flashes green when Run Time Error occurs.

Port LEDs (For RJ-45 ports on the front panel)

Every RJ-45 port on the front panel relevant four LEDs (10Mbps; 100Mbps; 1000Mbps; ACT) for indicating the connection speed and activity status.

Port LED summary table

LEDs	Status	Statement
10Mbps	Steady green	Connected as 10Mbps
100Mbps	Steady green	Connected as 100Mbps
1000Mbps	Steady green	Connected as 1000Mbps
ACT	Blinking green	There is traffic transverses the port

If the port is connected but the Port LED is dark, check the following items:

1. The switch and the connected device's power are on or not.
2. The connecting cable is good and with correct type
3. The cable is firmly seated in its connectors in the switch and in the associated device
4. The connecting device, including any network adapter is well installed and functioning

LINK; ACT LEDs (For Slide-in slots on the rear panel)

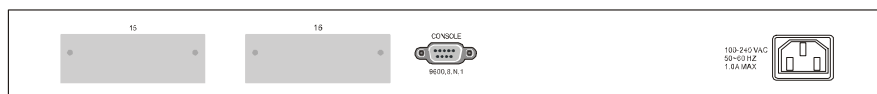
The slide-in slot has a LINK; ACT LED itself. When one slide-in module is well installed and functioning, the relevant one lights green.

RESET Button

The system will reboot when “RESET” button is pressed.

2.4 The Rear Panel

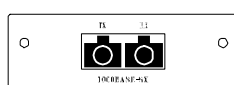
The rear panel of the switch is shown as below



Gigabit Slide-in slots

The two slide-in slots on the rear panel are reserved for following optional gigabit modules. They can provide fat pipes for up linking to backbone or connecting to servers.

--*Gigabit Fiber SC*



--*Gigabit Copper*



Gigabit Module Operation

Port	Media	Speed	Duplex Mode
Gigabit port	Gigabit RJ-45 port	10Mbps	Full Duplex
			Half Duplex
		100Mbps	Full Duplex
			Half Duplex
	Gigabit Fiber SC	1000Mbps	Full Duplex

Wiring for Gigabit Slide-in Module

Following are the summaries of cabling required:

Media	Speed	Wiring
Gigabit copper	10Mbps	Category 3,4,5 UTP/STP
	100Mbps	Category 5 UTP/STP
	1000Mbps	Category 5 UTP/STP
Gigabit Fiber SC	1000Mbps	Fiber SC

Console Port

The RS-232 console is an interface for connecting a terminal directly. Through the console port, it provides rich diagnostic information includes network statistics, link status and system setting. The operating mode of the console port is:

- DCE
- 9600 (Fix baud rate)
- n (No parity checking)
- 8 (8 Data bits)
- 1 (1 stop bit)
- None (No flow control)

You can use a normal RS-232 cable and connect to the console port on the device. After the connection, you can run any terminal emulation program (Hyper Terminal, Winterm, Telix, ... and so on) to enter the startup screen of the device. All the detail software operation, please refer to “Console port (out-of-band) connection” session of chapter 5.

Power Receptacle

For compatibility with electric service in most areas of the world, the switch's power supply automatically adjusts to line power in the range 100-240 VAC and 50-60 Hz.

Plug the female end of the power cord firmly into the receptacle on the rear panel of the switch. Plug the other end of the power cord into an electric service outlet then the power will be ready.

3. Installing 14+2 Gigabit Smart Switch

This switch can be placed directly on your desktop, or mounted in a rack. Users can immediately use most of the features simply by attaching the cables and turning the power on.

3.1 Desktop Installation

For desktop installation, the switch needs to put on a clean, flat desk or table close to a power outlet. Plug in all network cables and the power cord, then the system is ready.

Before installing the switch, you must ensure:

1. It is accessible and cables can be connected easily
2. Cabling is away from:
 - * Sources of electrical noise such as radios, transmitters and broadband amplifiers
 - * Power lines and fluorescent lighting fixtures.
3. Keep water or moisture off
4. Airflow around the unit and through the vents in the side of the case is great for heat radiation (company recommend that you provide a minimum of 25 mm clearance)

To prolong the operational life of your units:

1. Never stack unit more than eight sets high if freestanding
2. Do not place objects on top of any unit or stack
3. Do not obstruct any vents at the sides of the case

3.2 Rack-mount Installation

The switch may standalone, or may be mounted in a standard 19-inch equipment rack. Rack mounting produces an orderly installation when you have a number of related network devices. The switch is supplied with rack mounting brackets and screws. These are used for rack mounting the unit.

Rack Mounting the Switch in the 19-inch rack:

1. Disconnect all cables from the switch before continuing.
2. Place the unit the right way up on a hard, flat surface with the front facing toward you.
3. Locate a mounting bracket over the mounting holes on one side of the unit.
4. Insert the screws and fully tighten with a suitable screwdriver.
5. Repeat the two previous steps for the other side of the unit.
6. Insert the unit into the 19" rack and secure with suitable screws (not provided).
7. Reconnect all cables.

3.3 Installing Network Cables

Station Connections

Reference to the wiring statement of the previous section; connect each station to the switch with correct type of cables.

Switch-to-Switch Connections

In making a switch-to-switch connection, use Gigabit ports to connect another switch or backbone is strongly recommended. The Gigabit ports provide the fat pipe to the server or backbone connectivity for boosting the total system performance. Reference to the wiring statement of the previous section; connect each station to the switch with correct type of cables. Furthermore, as the switch supports Port Aggregation (Port Trunk) capability and up to 8 groups, it is also great to build up switch-to-switch connectivity. For detail information, please reference to the "Management Guide" session.

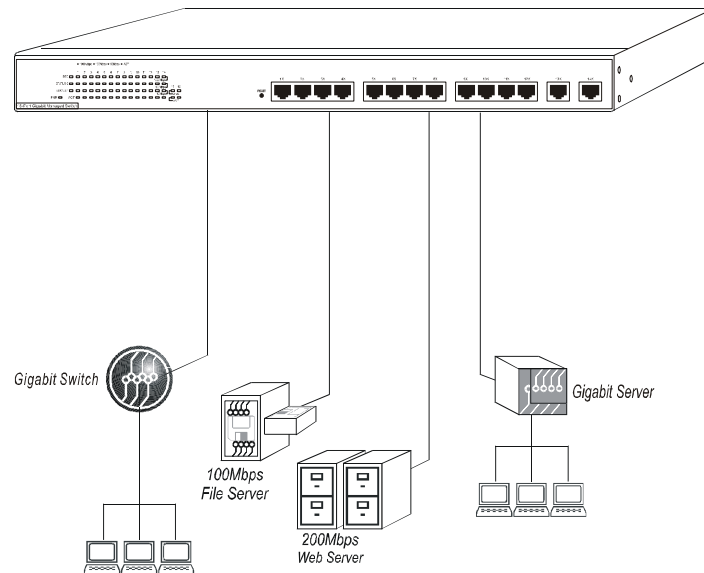
3.4 Module Installation

The two slide-in slots on the rear panel are purposed for installing optional modules. They can be used as a network backbone or connect to a server. Follow the steps as described to install a module:

1. Power off the switch
2. Removing the two screws on the face plate of slide-in slot with a flat-head screwdriver
3. Push the module gently into the slot along the slide tracks
4. Ensuring that it firmly engages with the connector then tighten the screws to secure the module

Attention : The slide-in slots are not hot swappable, power off the switch before installing modules

3.5 Network Application



4. Management Guide

This section instructs you how to enter and proceed the advanced management capability, which can be accessed by RS-232 serial port (out-of-band) on the rear panel or by Telnet session / Internet Browser over the network (in-band).

The management functions such as :

- Port Information/configuration/Duplex mode/Flow Control
- 802.1Q VLAN
- Port Aggregation
- Port mirroring
- Upgrade system firmware
- Reboot system

Factory Default value:

IP : ***10.0.0.1***
Subnet Mask : ***255.0.0.0***
Default Gateway : ***10.0.0.254***

privilege levels:

- “root”*** : root can do any configuration includes changing password and enable/disable management capability via console port. The default password of root is “super user”
- “admin”*** : admin can do any configuration except changing password. The default password of admin is “admin”
- “guest”*** : guest can view whole the runtime information only, moreover, access to Web management interface is not allowed. The default password is “guest”

4.1 Console Port (Out-of-band) connection

After attaching a RS-232 cable (Straight-through) to the serial port of a PC running a terminal emulation program, press **“Enter”** key then login screen appears. Enter your username and password to login the management console.

Note :

The management functions of console program are exactly the same with web-based management interface but in text mode. For further operation, please refer to '*Starting a Web Browser Session*'.

```
16 GIGA Management Switch                                     UserLevel: NONE
=====
[Login]
UserName : admin
Password : *****
```

Attention : 1. The factory default value of UserName and Password is “admin”
2. For detail console port configurations, please refer to “Console Port” in chapter 3

4.2 In-Band Connections (Web Browser / Telnet)

To manage the switch through in-band access, you should configure the management station with an IP address and subnet mask compatible with your switch. It can be managed using either a standard Web Browser or a Telnet session from any computer attached to the network.

Starting a Telnet Session

To access the switch through a Telnet session :

1. Sure of the switch is configured with an IP address and the switch is reachable from a PC
2. Start the Telnet program on a PC and connect to the switch

Note :

The management functions of Telnet program are exactly the same with web-based management interface but in text mode. For further operation, please refer to '*Starting a Web Browser Session*'.

Starting a Web Browser Session

This Web Browser User Interface is coded by Java Applet and running on the Java™ **Virtual Machine (JVM) version 1.3.1** platform. You should configure the management station with an IP address and subnet mask compatible with your stackable switch for accessing it. Also, the management station should be well configured and connected to Internet for automatically downloading (upgrading) the suitable JVM through Internet from “<http://java.sun.com>”. Or you can download it yourself by the URL “<http://java.sun.com/j2se/1.3/download.html>” and then manually install it.

Attention : Occasionally the newer **Java™ Virtual Machine** is not backward compatible, that JVM version 1.3.1 is strongly recommended to ensure properly operation

Running your Web Browser and enter the IP address “10.0.0.1” as the URL in the “address” field. After authentication procedure, the home page shows up.

The screenshot displays a web-based configuration interface with a top navigation bar containing buttons: Save, Default, Reboot, Ping, Telnet, Contact, and Upgrade. Below this is a tabbed interface with tabs for System, Ports, VLAN, Port Aggregation, and Mirror. The 'System' tab is active, showing two main sections: 'System Information' and 'Network Configuration'.

System Information:

Name	NONE
Contact	NONE
Location	NONE

Buttons: Apply, Undo

Version Information:

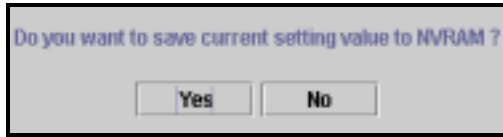
SW Ver.	1.0
Boot-Up Image Ver.	1.00(1/5/2002)
Post Image Ver.	1.05(12/18/2002)
Runtime Image Ver.	1.05(12/25/2002)

Network Configuration:

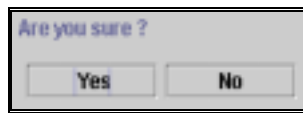
IP Address	10.0.0.1
Subnet Mask	255.0.0.0
Gateway IP	10.0.0.254
MAC Address	20-03-12-25-14-45

Buttons: Apply, Undo

Function	Statement
<Save>	Save the current setting to Non-volatile Memory . The difference between <Save> and <Apply> is that <i>Apply</i> applies settings right away but saves the values in the system memory. Every time when switch reboots, system obtains system parameters from Non-volatile Memory you <Saved> before but not system memory. Click “Yes” button to save it to Non-volatile Memory .



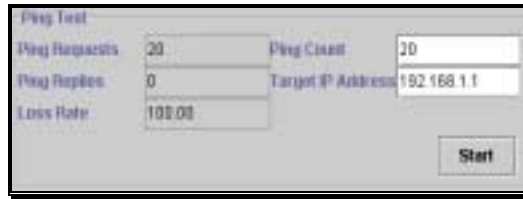
<Default>	Make the switch returning to factory default value. Click Default and click “Yes” button, the switch will return to initial value. If you want to clear the previous value in the System Memory , please <Save> it.
-----------	---



<Reboot>	You can reboot switch.
Warm Boot	Reboot the switch in a short time.
Cold Boot	Boot the switch and with fully Power On Self Test (POST). The system is completely checked but spend much time.



<**Ping**> The **Ping** is a commonly used tool to detect the remote host or IP address exists or not. Moreover, network status also can be known by the ratio of packets Reply and Loss.



The screenshot shows a 'Ping Test' window with the following fields and values:

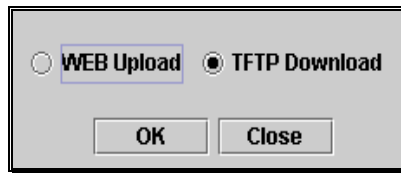
Field	Value
Ping Requests	20
Ping Replies	0
Loss Rate	100.00
Ping Count	20
Target IP Address	192.168.1.1

A 'Start' button is located at the bottom right of the window.

<**Telnet**> By simply clicking the <**Telnet**> button, the Telnet program implements and displays login screen.

<**Contact**> Contact technicians for technical support by E-Mail

<Upgrade>

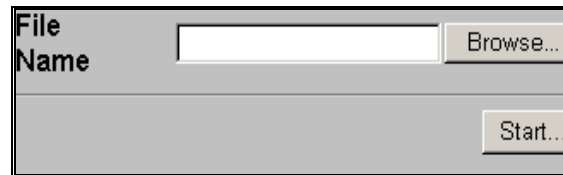
A dialog box titled "<Upgrade>" with two radio buttons: "WEB Upload" (selected) and "TFTP Download". Below the buttons are "OK" and "Close" buttons.

☐ WEB Upload ☒ TFTP Download

OK Close

WEB Upload

1. Select "WEB Upload" radio button then click **OK**
2. Specify the file path by clicking **Browse** button and click **Start**

A dialog box titled "File Name" with a text input field and a "Browse..." button. Below the input field is a "Start..." button.

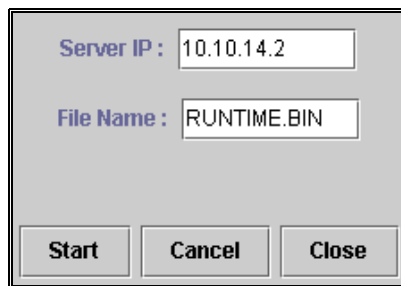
File Name

Browse...

Start...

TFTP Download

1. Select "TFTP Download" radio button then click **OK**
2. Enter the TFTP server's IP address in Server IP field
3. Enter file name in File Name field
4. Click **Start** button to download the code and system will update with it automatically

A dialog box titled "TFTP Download" with two text input fields: "Server IP" (containing "10.10.14.2") and "File Name" (containing "RUNTIME.BIN"). Below the fields are "Start", "Cancel", and "Close" buttons.

Server IP : 10.10.14.2

File Name : RUNTIME.BIN

Start Cancel Close

System

Network Configuration

IP Address	IP address of this device
Subnet Mask	NetMask of your network
Gateway IP	IP address of Gateway

System Information

Name	Naming the system (optional)
Contact	Who the System administrator is (optional)
Location	Where the switch locates (optional)

Ports

Information

It is a ports' configurations summary table. Via the summary table, you can know status of each port clear at a glance, like *Link Up/Link Down*, *Enable/Disable*, *Link Speed*, *Duplex mode* and *Flow Control*.

Information Configuration							
Port	Type	Link	Admin	Speed	Duplex	FlowCtrl	
1	1000T	Link Down	Enable	-	-	NONE	
2	1000T	Link Down	Enable	-	-	NONE	
3	1000T	Link Down	Enable	-	-	NONE	
4	1000T	Link Down	Enable	-	-	NONE	
5	1000T	Link Up	Enable	100M	Full	NONE	
6	1000T	Link Down	Enable	-	-	NONE	
7	1000T	Link Down	Enable	-	-	NONE	
8	1000T	Link Down	Enable	-	-	NONE	
9	1000T	Link Down	Enable	-	-	NONE	
10	1000T	Link Down	Enable	-	-	NONE	
11	1000T	Link Down	Enable	-	-	NONE	
12	1000T	Link Down	Enable	-	-	NONE	

Configuration

Port attributes can be setup in this page.

Port	Admin	Speed/Duplex	Flow Ctr
1	Enable	Auto	Disable
2	Enable	Auto	Disable
3	Enable	Auto	Disable
4	Enable	Auto	Disable
5	Enable	Auto	Disable
6	Enable	Auto	Disable
7	Enable	Auto	Disable
8	Enable	10 Half	Disable
9	Enable	10 Full	Disable
10	Enable	100 Half	Disable
11	Enable	100 Full	Disable
12	Enable	Auto	Disable

Setup Port Attributes

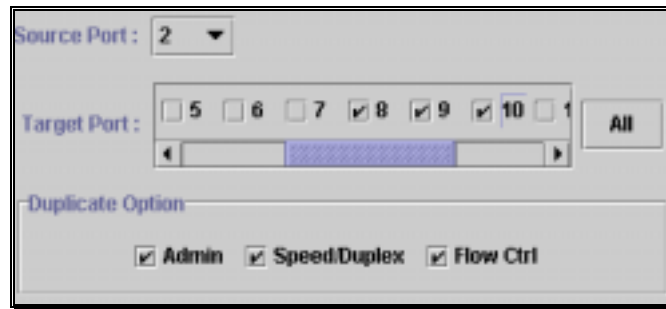
1. Leave the “Admin” column ‘Enable’ value to make the port to be in operation or ‘Disable’ to pause it
2. Select Duplex mode---10Half/10Full; 100Half/100Full; ‘Auto’ for auto-negotiation and **1000Full auto-detection**
3. Select ‘Enable’ to take “Flow Control” effect
4. Click **Apply** button to apply settings

Flow Control operation mode :

Speed / Duplex mode	Flow Control
10Full	IEEE802.3x Pause Frame
100Full	IEEE802.3x Pause Frame
1000Full	IEEE802.3x Pause Frame

Duplicate Port Attributes

Click “Duplicate” button, the dialogue screen appears.



Source Port : 2

Target Port : ☐ 5 ☐ 6 ☐ 7 ☒ 8 ☒ 9 ☒ 10 ☐ 11

Duplicate Option

☒ Admin ☒ Speed/Duplex ☒ Flow Ctrl

1. Select Source Port (for example Port 2)
2. Select Target Port, click for select all (for example Port 8, 9, 10)
3. Select the port attributes you want to duplicate
4. Click to submit values
5. Click button to apply settings
6. As the following result, port 2 is duplicated to port 8, 9, 10 accompany with specified attributes.

Port	Admin	Speed/Duplex	Flow Ctrl
1	Enable	Auto	Disable
2	Enable	10 Full	Enable
3	Enable	Auto	Disable
4	Enable	Auto	Disable
5	Enable	Auto	Disable
6	Enable	Auto	Disable
7	Enable	Auto	Disable
8	Enable	10 Full	Enable
9	Enable	10 Full	Enable
10	Enable	10 Full	Enable
11	Enable	Auto	Disable
12	Enable	Auto	Disable

VLAN

The VLAN is a group of ports that may spread around the network but communicate as though they belong to one subnet. By using IEEE802.1Q compliant VLAN, all ports can be reorganized into separate broadcast domains for security reasons and reduce bandwidth occupation instead of using routers to divide whole network into subnets. It produces cleaner network environment by reducing broadcast traffic and simplify network management by allowing you to move devices to another VLAN without changing physical connections.

However, before enabling VLAN , pay attention to :

- All ports are default to VLAN 1 and assigned PVID 1
- All the ports of a Aggregation Group must be treated as an integer when added to/deleted from a VLAN

VLAN Static List

This screen is used to Add / Remove / Modify VLAN and up to 255 groups. The VLAN groups that have been created are all listed here.

To create a new VLAN group

1. Specify the name for the new VLAN group (VLAN name is only used for identification)
2. Enter a number (VLAN ID) for the new VLAN group
3. Check the “**Active**” box to activate the VLAN or leave it blank and activate it afterward
4. Click <<Add button to create the new VLAN

The screenshot shows a web-based configuration interface for VLANs. On the left, under the 'Current' tab, there is a list of existing VLANs: 'ID:1 Name: State:ACTIVE', 'ID:3 Name:MKT State:ACTIVE', and 'ID:222 Name:MFD State:ACTIVE'. In the center, there are three buttons: '<<Add', 'Remove>>', and 'Modify'. On the right, under the 'New' tab, there are input fields for 'VLAN ID' (containing '222'), 'VLAN Name' (containing 'MFD'), and a 'Status' checkbox which is checked and labeled 'Active'.

To remove a VLAN group

1. Select a VLAN group you want to remove from the “Current” list
2. Click **Remove>>** button to remove it

Attention : 1. If a removed port is no longer belong to any other group, it is temporarily disabled because no one can communicate with it.
2. If one port's PVID is equal to this VLAN ID, removing this VLAN group will not allow until you change it.

To modify a VLAN group

1. Select a VLAN group you want to remove from the current list
2. Modify parameters in “New” column
3. Click **Modify** button to submit the new parameters

VLAN Static Table

This screen is used to Add/Remove member ports of a VLAN.

To add member port

1. Click the “VLAN ID” combo box and select a VLAN you want new ports to join in
2. Select ports (press Shift/Ctrl key for selecting multi ports) in the “Non-Member” column
3. Click <<Add button to join selected ports in

To remove member port

1. Click the “VLAN ID” combo box and select a VLAN you want to remove ports
2. Select ports (with Shift/Ctrl key to select multi ports) in the “Member” column
3. Click Remove>> button to delete selected ports

Note :

1. If a removed port is no longer belong to any other group, it is temporarily disabled because no one can communicate with it
2. The port which is assigned a PVID and the PVID is equal to VLAN ID, removing the port will not allow until you change it

VLAN Port Configuration

When the VLAN-enabled switch receives an untagged packet, the packet will be sent to the port’s default VLAN according to the PVID (port VLAN ID) of the receiving port.

Port	PVID
1	1
2	1
3	1
4	1
5	1
6	1
7	1
8	1
9	1
10	1
11	1
12	1
13	1
14	1
15	1
16	1

To change the PVID

1. Double click the “PVID” column of a port
2. Input a new VLAN ID (1~255)
3. Press “**Enter**” to submit the value
4. Click **Apply** button to apply it

Note :

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1. All the ports are default as members of VLAN 1 and assigned PVID 1
 2. The port which was assigned a PVID and the PVID is equal to VLAN ID, removing the port will not allow until you change it
 3. Automatically, a port will join the VLAN of its PVID, and if the VLAN does not exist, system will create it
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Port Aggregation

Port Aggregation (Port Trunk) is used to increase the bandwidth of a switch-to-switch connection and backup. This switch provides 8 port aggregation groups, which consist of 2 ports and create bandwidth up to 4Gbps per group at full duplex mode. Check the box of Aggregation Group in the Status Enable column and press “Apply” then the selected Aggregation Group is activated.

Aggregation Group	Member Port	Status Enable
0	01;02	<input checked="" type="checkbox"/>
1	03;04	<input type="checkbox"/>
2	05;06	<input type="checkbox"/>
3	07;08	<input checked="" type="checkbox"/>
4	09;10	<input type="checkbox"/>
5	11;12	<input type="checkbox"/>
6	13;14	<input type="checkbox"/>
7	15;16	<input type="checkbox"/>

However, before making connections between switches, pay attention to :

- The ports at both ends of a Port Aggregation connection must be configured as Aggregation Ports
- The ports at both ends of a Port Aggregation connection must have the same port properties, including Speed, Duplex mode
- All the ports of a Port Aggregation must be treated as an integer when added to/deleted from a VLAN
- Before connecting cables between switches, enable the Pot Aggregation to avoid looping
- Before disabling Port Aggregation, remove the connecting cables between switches to avoid looping
- Both two slide-in slots should use the identical modules (two coppers / two fibers) otherwise the Port Aggregation connection is invalid

Mirror

Port mirror is used to mirror traffic from source port to a target port for analysis. Only 2 ports can be monitored (mirrored) simultaneously to 1 sniffer port (target port). (Note that the target port must be in the same VLAN as the source port)

1. Click “Active” radio button to activate port mirror
2. Select ‘Monitored Ports’ (up to 2 ports)
3. Click ‘Sniffer Port’ combo box and select a sniffer port (target port) and click “Apply” to apply
4. This figure describes port 2 and port 3 will be mirrored to port 11



5. Product Specifications

Standard	IEEE802.3 10BASE-T IEEE802.3u 100BASE-TX IEEE802.3x full-duplex operation and flow control IEEE802.3ab 1000BASE-T IEEE802.3z 1000BASE-SX IEEE802.1Q VLAN interoperability
Interface	14 * 10/100/1000Mbps auto MDI/MDI-X RJ-45 switching ports 2 * slide-in slots for optional gigabit copper/fiber modules 1 * RS-232 console port 1 * system reset button
Cable Connections	RJ-45 (10BASE-T): Category 3,4,5 UTP/STP RJ-45 (100BASE-TX): Category 5 UTP/STP RJ-45 (1000BASE-T): Category 5 or enhanced UTP/STP 1000Mbps fiber: 62.5/125 or 50/125μm multi-mode fiber optic
Network Data Rate	10/100/1000Mbps Auto-negotiation
Transmission Mode	10/100Mbps Full-duplex, Half-duplex 1000Mbps Full-duplex

LED indications	System Power; Alive; Status 0; Status 1
	RJ-45 Port (Fixed) SPEED; ACT
	Slide-in slot LINK; ACT
Memory	4K MAC entries 2Mbit packet switching
Emission	FCC Class A, CE
Operating Temperature	0° ~ 50°C (32° ~ 122°F)
Operating Humidity	10% - 90%
Power Supply	100~240 VAC, 50~60 Hz

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