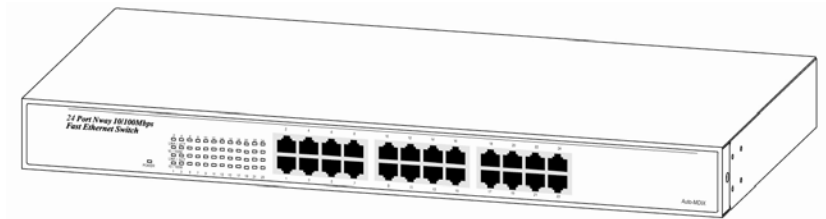


# 24 Ports Nway Fast Ethernet Switch

## User's Manual



**FCC Warning**

This device has been tested and found to comply with 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 radiates radio frequency energy and, if not installed and used in accordance with the user's manual, may cause interference in which case user will be required to correct the interference at his own expense.

**CE Mark Warning**

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

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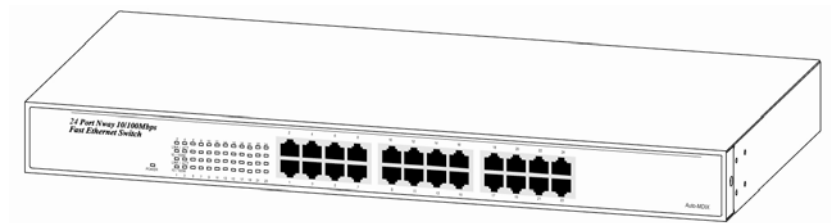
# Chapter 1

## 24 Ports Nway Fast Ethernet Switch

### Introduction

The Switch provides 24 10/100Mbps ports. It was designed for easy installation and high performance in an environment where traffic on the network and the number of user increasing continuously.

The 19-inch standard rack-mount size was specifically designed for ROBO (Remote Office & Branch Office) and medium to large workgroups. The Switch can be installed where space is limited; moreover it provides smooth network migration and easy upgrade to network capacity.



## Key Features

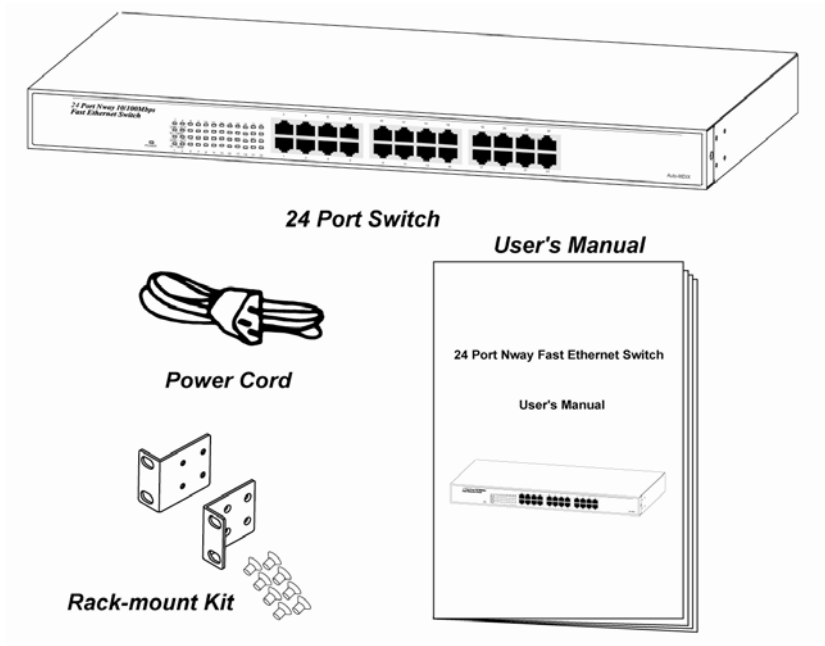
- 24 Port 10/100Base T/TX Nway (Auto-negotiation) Switch with RJ-45 connectors
- 19-inch standard Rack-mount size
- Auto-detect of Full/Half-duplex modes in all ports
- All port (twisted pair) support **Auto MDIX** function
- Supports up to 8K MAC address filtering and aging
- 2.5Mbits Buffer Memory
- Non-blocking wire-speed forwarding and filtering
- Store & Forward architecture and head of line blocking prevention
- Broadcast storm prevention
- Support IEEE 802.3x compliant flow control for FDX and back-pressure flow control for HDX
- IEEE 802.3x flow control for Full-duplex and back pressure half duplex flow control
- Supports Back-pressure flow control for Half-duplex
- Self address learning, forwarding, and filtering schemes
- Supports SMII/GMII interface I/O delay
- Dedicated full-duplex 200Mbps bandwidth on each port
- Status LEDs: Power, 10/100M And Link/Activity
- Smart plug & play

## Chapter 2

### Package Contents

Before you start to install the Switch, please verify your package that contains the following items:

- One Fast Ethernet Switch
- Rack-mount Kit For Rack Installation
- One Power Cord
- One User's Manual



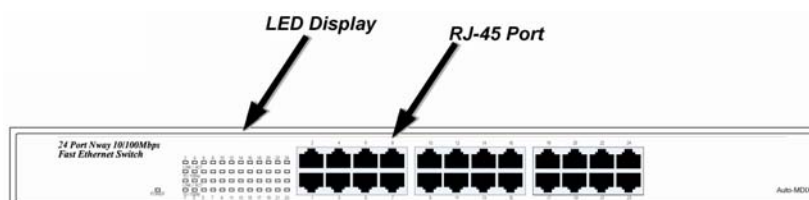
Note: If any of these items is found missing or damaged, please contact your local supplier for replacement.

## Chapter 3

### Front Panel Layout

#### A. 24 RJ-45 10/100Mbps Switch Ports

There are 1~24 RJ-45 connectors on the front panel for connecting to servers, workstation or other network devices. The Switch provides 24 10/100Mbps switching ports that could sense the 10/100M speed and negotiate Full/Half-duplex mode automatically. These switching ports allow users connect the Switch to 10Base-T and 100Base-TX devices.



#### B. LED Indicators of 16 Port 10/100Mps Switch

LED	Color	Status	Description	No. Of LED
Power	Yellow	On	Power on	1
10/100M	Green	On	Port is on the 100M status	24 (1~24)
		Off	Port is on the 10M status	24 (1~24)
LINK/ACT.	Green	On	10/100Mbps port for connection	24 (1~24)
		Flashing	10/100Mbps for data activating	24 (1~24)

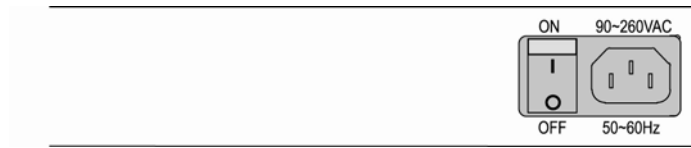
#### C. LED Definitions

Power LED	
On	The unit is powered on and ready for use.
Off	The unit is powered off.
10/100M LED	
On	The port is on the 100Mbps status.
Off	The port is on the 10Mbps status.
LINK/ACT LED	
On	The port is ready for 10/100Mbps connection.
Flashing	The data is transmitted or received on the port.

## Rear Panel Layout

### AC input.

AC input (90-260V/AC, 50-60Hz) UL Safety.



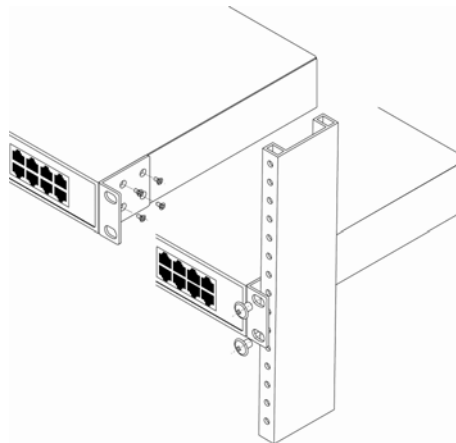
## Chapter 4

### Rack Mounting

Optional Rack-mounting brackets are available to mount Switch in standard EIA 19-inch rack. 24 port 10/100Mbps Switch is supplied with two mounting brackets and eight screws. And please assemble according to the following steps.

First, put the Switch on the flat surface. Locate the mounting brackets on the sides of the Switch with the mounting holes on each.

Next, insert the screw through the bracket and into the bracket mounting holes in the Switch. Then, place the Switch in to 19-inch rack.





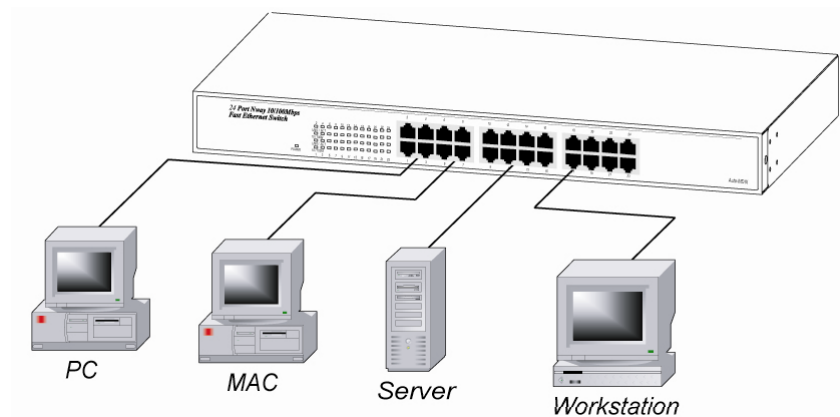
## Chapter 5

### Installation

**Note:** The Switch supports the AUTO-MDIX function. Just make sure the twisted-pair cables meet the ANSI/EIA/TIA 568A(straight-through) or 568B(crossover) specification.

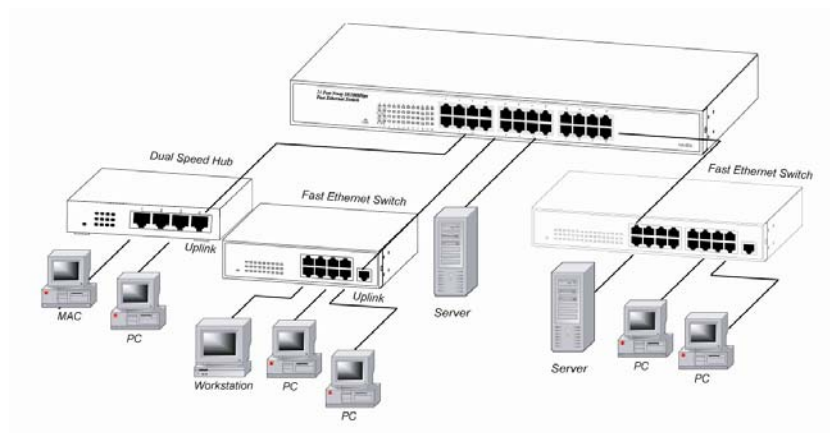
#### A. How to connect the Switch to PCs, servers, and other network devices

Connect straight-through twisted-pair cable (Cat. 5) to the Switch and PCs, servers and other network devices. Then the network environment can be built easily as the following figure showed.



## B. How to UP-Link the Switch to a Switch or a Hub

Use CAT5 twisted pair cable to connect the Switch to another Switch or Hub on any port. Don't worry about to use straight-through cable or crossover cable. The switch support AUTO-MDIX on all port.

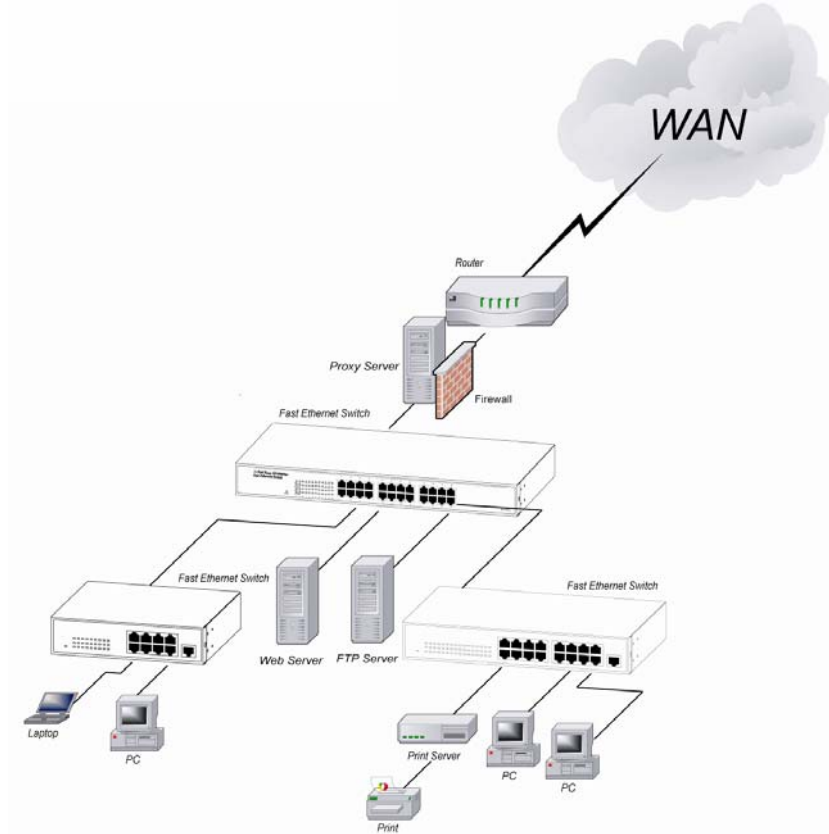


## Chapter 6

### Technical Specifications

1. Standards Compliance
  - IEEE 802.3 10BASE-T; IEEE 802.3u 100BASE-TX
2. Number Of Ports
  - 24 integrated ports (10/100Mbps Nway port)
3. Fully Flow Control Supported
  - Half-duplex mode: Backpressure
  - Full-duplex mode: IEEE 802.3x
4. Network Transmission Media
  - 10Base-T Cat. 3, 4, 5 UTP/STP
  - 100Base-TX Cat. 5 UTP/STP
5. Network Status Monitoring LEDs
  - Per port: LINK/ACT, 10/100M
  - System: POWER
6. Buffer Memory
  - 2.5Mbits per device
  - RAM buffer dynamically allocated for each port
7. Filter/Forward Rate
  - Packet Filtering/ Forwarding Rates (64Bytes)
  - 100Mbps port - 148,800pps
  - 10Mbps port - 14,880pps
8. MAC Address
  - Up to 8K per device
9. Power
  - AC input (90-260V/AC, 50-60Hz) UL Safety
10. Power Consumption
  - 15 Watts (Max)
11. Operating Temperature
  - 0°~ 60°
12. Store Temperature
  - -20°~ 90°

- 13. Humidity
  - 10% ~90% RH (Non-condensing)
- 14. Dimension (L × W × H)
  - 440mm × 220mm × 44mm
- 15. Weight
  - 2.5Kg
- 24. Safety & EMI Certificates
  - CE & FCC-A



## Appendix

### A. ANSI/TIA/EIA-568-A PLUG & Twisted-pair Cable

The IEEE802.3u Standards permits the use of category 3, 4, 5 or better balanced cable pairs, installed according to ANSI/EIA-568-A. This appendix provides pinout and brief information for the CAT5 unshielded twisted pair cables

### B. EIA568A pin assignment:

Pin Number	Assignment
1	Plus data transmission (Pair 3)
2	Minus data transmission (Pair 3)
3	Plus data receiver (Pair 2)
6	Minus data receiver (Pair 2)
4	Not used by 10BASE-T and 100Base-TX (Data pair 1)
5	Not used by 10BASE-T and 100Base-TX (Data pair 1)
7	Not used by 10BASE-T and 100Base-TX (Data Pair 4)
8	Not used by 10BASE-T and 100Base-TX (Data Pair 4)

### C. Recommend CAT5 UTP specifications

#### Physical:

- FR-PVC cable construction
- Cable Type: 4-pair unshielded-twisted pair solid copper
- Conductors: 24 AWG, solid bare annealed copper
- Operating temperature: -20 °C to +75 °C

#### Electrical:

- Impedance: 100  $\Omega$   $\pm$ 15 %
- Near-End Cross-talk: 38dB @ 100 MHz
- Attenuation: 22 dB/100 m typical @ 100 MHz
- Maximum DC resistance: 9.38  $\Omega$  /100 m (24 AWG) at 20 °C
- Maximum DC insulation resistance: 150M  $\Omega$  /km

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