Installation Guide
24-port 10/100 Fast Ethernet Switch with 1 Fiber Connection
Model Name : KS-324F

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Contents

P/N: 17000084

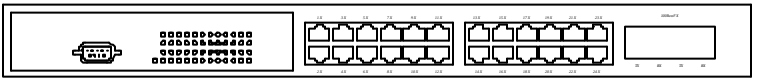
1. Introduction

This 24port Switch is a 24-port 10/100Mbps Fast Ethernet switch. This switch supports the advanced features for current switch design. This switch can auto detect the 10/100Mbps speed, full/half duplex mode and MDI/MDI-X connection. These features provide user the simplest way to complete the network connection.

There is a console port on the switch. You can configure the switch from the console for VLAN setting, port setting and priority setting. Port 24 could be a TP port or FX port and a FX module port is reserved for 100BaseFX expansion.

This 24port Switch also supports CoS function for advanced network application. This switch supports 2 priority transmit queues per port and long Ethernet packet up to 1536 bytes for tagged packets.

Module Not Added



Module Added (TX Port 24 will be disabled)

1.1 Package Contents

- One 24port Smart Switch
- One AC power cord
- One console cable
- Two rack-mount kits and screws
- This user's guide

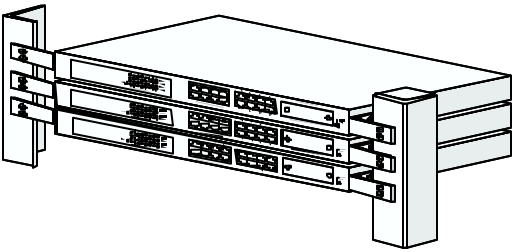
2. Where To Place the 24port Switch

This 24port Switch can be placed on a flat surface (your desk, shelf or table).

Place the 24port Switch at a location with these connection considerations in mind:

- The switch configuration does not break the rules as specified in Section 3.
- The switch is accessible and cables can be connected easily to it.
- The cables connected to the switch are away from sources of electrical interference such as radio, computer monitor, and light fixtures.
- There is sufficient space surrounding the switch to allow for proper ventilation (the switch may not function according to specifications beyond the temperature range of 0 to 50 degrees C).

You can also install this 24port switch on a 19" rack with the rack-mount kits as the picture.

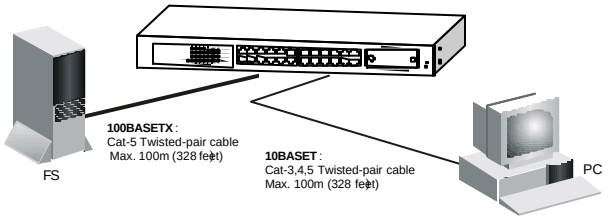


3. Configure the Network Connection

3.1 Connecting Devices to the 24port Switch

[Connection Guidelines:]

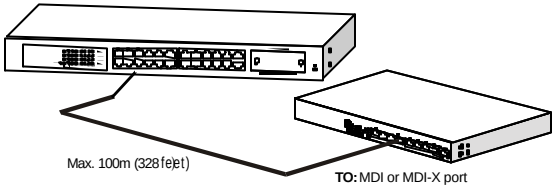
- Use Category 3 or 5 twisted-pair Ethernet cable when connecting 10BaseT devices to the switch (cable pin assignments defined in Appendix A)
- Use Category 5 (straight-through) twisted-pair Ethernet cable when connecting 100BaseTX devices to the switch (cable specifications are defined in Appendix B)
- Always limit the cable distance to 100 meters (328 ft) as defined by IEEE specification
- If your switch has a FX port, you can connect long distance fiber optic cable to the switch.
- Because this switch supports **Auto MDI/MDI-X** detection, you can use normal straight through cable for both workstation connection and hub/switch



cascading.

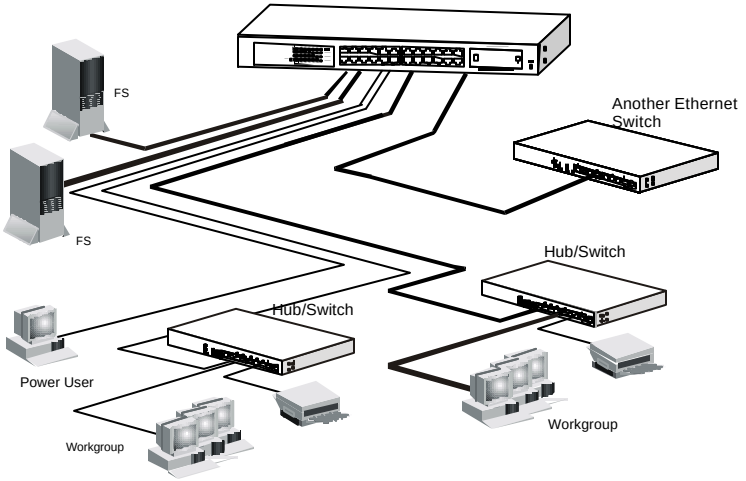
3.2 Connecting to Another Ethernet Switch/Hub

This 24port Switch can be connected to existing 10 Mbps or 100 Mbps hubs/switches. Because all the TP ports on the 24port Switch are Auto MDI/MDI-X, you can connect from any TP port of the 24port Switch to the MDI or MDI-X port of another hub/switch with Straight Through or crossover cables.



3.3 Application

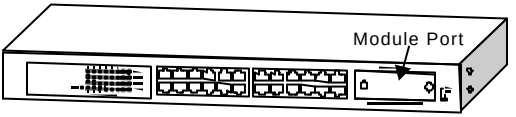
A switch can be used to overcome the hub to hub connectivity limitations as well as improve overall network performance. Switches make intelligent decisions about where to send network traffic based on the destination address of the packet. As a result, the switch can significantly reduce unnecessary traffic. The example below demonstrates the switch ability to segment the network. The number of nodes on each segment is reduced thereby minimizing network contention (collisions) and boosting the available bandwidth per port.



4. For 100BaseFX Connection

4.1 Adding 100BaseFX Module

This 24port switch has a module port for 100BaseFX connection extension. You can add a 100BaseFX module to the switch and this switch gets a 100BaseFX port for long distance fiber optic cable connection. But *when this module is added, the 24th TP port will be disable and this FX port become the*



24th port.

Please follow the steps to add the module to the switch.

1. Turn off the switch.
2. Loosen the screws of the blank cover and remove the cover from the module port of the switch.
3. Slide in the module into the module port.
4. Tighten the screws of the module to the switch.
5. Connect the fiber optic cable to the FX port of the module.
6. Power on the switch.
7. Refer to Section 6 to configure Port 24 to [Auto-Disable, 100Mbps, Full Duplex] for 100BaseFX connection from console.

5. LEDs Conditions Definition

5.1 LEDs Defined

The LEDs provide useful information about the switch and the status of all individual ports.

LED	STATUS	CONDITION
Power	ON	Switch is receiving power.
Link / Act	ON	Port has established a valid link.
	Flashing	Data packets being received or sent.
	Green	The connection speed is 100Mbps.
	Yellow	The connection speed is 10Mbps.
FDX / Col	ON	The connection is Full Duplex.
	Flashing	Packet collisions occurring. A low level of collision is a part of normal Ethernet Operation.

6. Configure from Console

6.1 Hardware Setting for Console

Before using the console connection to configure the switch, please make sure that you have already install the terminal program "HyperTrm" in your Windows. If you can not find it in your Windows, please install it first with your Windows Installation Disk. You can also use other terminal program for console setting if you already have one.

1. Please connect from the console port of the switch to COM port of PC (COM1 or COM2) with the attached console cable.
2. Start the terminal program. Select the COM port on PC and set the operation configuration to [9600,8,N,1] and the terminal interface is Auto.
3. Power on the switch and the following screen will appear on your terminal screen. If you cannot find it, please restart the terminal program and reboot

the switch.

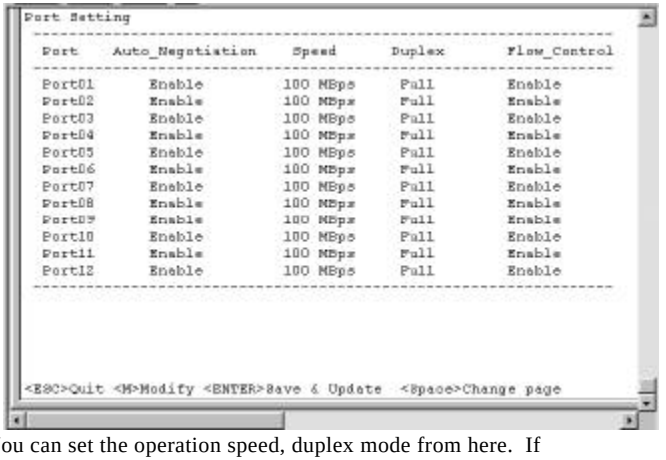
There are five items in the setup menu. You can select one and follow the direction to complete the setting.

6.2 Operation in Console

1. **System Setting** : There is only one item in this function. You can enable or

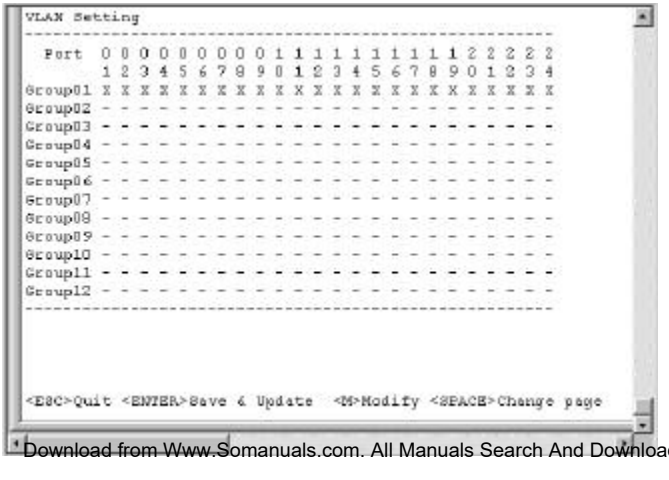
disable the backpressure function for half duplex. If it is enable, it can prevent packets lost in half duplex mode. But it will also reject packets when the network traffic is very heavy and that may cause some network connections fail.

2. **Port Setting** :

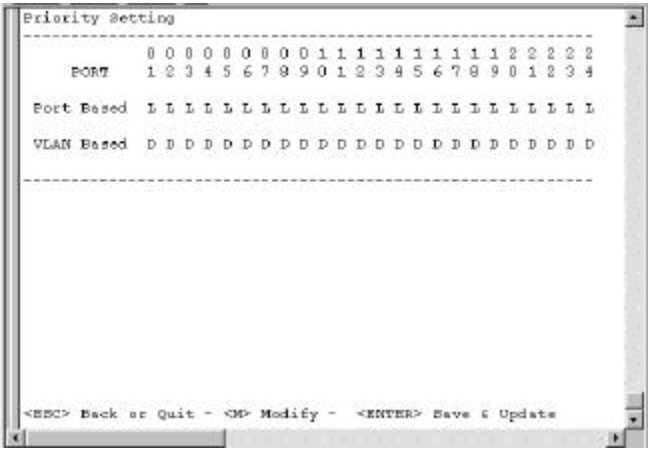


You can set the operation speed, duplex mode from here. If "Auto_Negotiation" is enable, the settings in speed and duplex will be ignored. If "Auto_Negotiation" is disable, the speed and duplex setting will take effect.

3. **VLAN Setting** :



You can configure VLAN groups from this function. Because every port must belong to some VLAN, the removed port from VLAN will be assigned to Group 24 automatically if it does not belong to any VLAN any more after being removed. In the setting, VLAN groups can be overlapped on ports in this switch.



4. Priority Setting :

There are two transmit priority queues for each port of the switch and you can configure the priority setting here.

Port Based : If this setting of port is set to H, all the packets received from this port will always forwarded to high priority queue and being sent with high priority.

VLAN Based : If the setting of port is set to E, tagged packets received from this port will be forwarded with the priority information in the tag.

5. **Restore Default Setting** :

You can restore to the default setting of switch with this function.

A. Product Specifications

Access Method	CSMA/CD, 10 Mbps or 100 Mbps
Standards Conformance	IEEE 802.3 10BASE-T, IEEE 802.3u 100BASETX/FX
Communication Rate	10/100Mbps on RJ-45 ports, 100Mbps on FX port
Communication Mode	Full / Half duplex
Media Supported	*10BASE-T* - 100 Ohm Category 3,4,5 twisted-pair *100BASE-TX* - 100 Ohm Category 5 twisted-pair *100BASE*-FX - fiber optic cable
Indicator Panel	LEDs for Power (each unit), Link/Act, FDX/Col. (each port)
Number of Ports	24* RJ45 TP ports, 1* module port
Console	RS232 interface [9600,8,N,1]
MDI-X/MDI Selection	Auto detect
Dimensions	440 x 172 x 43 mm
Certification	CE Mark
Emissions	FCC Class A
Immunity	IEC 1000-4-2/3/4
Power Consumption	16Watts max.
Input Power	Full range: 100 to 240V, 50 to 60 Hz
Temperature	Standard Operating: 0 to 50℃
Humidity	5% to 95% (Non-condensing)

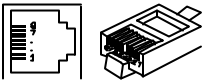
Network Bridging Function	Filtering, forwarding and learning
Switching Method	Store-and-forward
Address Table	8K entries
Filtering/Forwarding Rate	Line speed
VLAN	24 groups max., configured from console
CoS	2 transmit queues per ports
Priority	Port-Based or Tagged-Based

B. Cable Specification

Two different types of cable could be used on this 24port Switch:

- Straight through cable
- Cross-over cable
- Fiber Optic cable if this 24port Switch has FX port

Cable Schematics



Straight-Through Cable					
Hub / Switch side				Adapter side	
Pin #		Pair #		Pin #	Pair #
1	RX+	White-Green	----------	1 RX+	White-Green
2	RX-	Green	----------	2 RX-	Green
3	TX+	White-Orange	----------	3 TX+	White-Orange
4	Not Used	Blue	----------	4 Not Used	Blue
5	Not Used	White-Blue	----------	5 Not Used	White-Blue
6	TX-	Orange	----------	6 TX-	Orange
7	Not Used	White-Brown	----------	7 Not Used	White-Brown
8	Not Used	Brown	----------	8 Not Used	Brown
Cross-Over Cable					
Hub / Switch side				Hub / Switch side	
Pin #		Pair #		Pin #	Pair #
1	RX+	White-Green	---------- 	1 RX+	White-Green
2	RX-	Green		2 RX-	Green
3	TX+	White-Orange		3 TX+	White-Orange
4	Not Used	Blue		4 Not Used	Blue
5	Not Used	White-Blue		5 Not Used	White-Blue
6	TX-	Orange		6 TX-	Orange
7	Not Used	White-Brown		7 Not Used	White-Brown
8	Not Used	Brown		8 Not Used	Brown

C. Compliances

EMI Certification

FCC Class A Certification (USA)

Warning: This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A digital device pursuant to Subpart B of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures are required to correct the interference.

Canada Department of Communications - Class A

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus", ICES-003 of the Department of Communications.

CE Mark Declaration of Conformance for EMI and Safety (EEC)

This is to certify that this product complies with ISO/IEC Guide 22 and EN45014.
It conforms to the following specifications:

EMC:	EN55022(1988)/CISPR-22(1985)	class A
	EN60555-2(1995)	class A
	EN60555-3	
	IEC1000-4-2(1995)	4kV CD, 8kV AD
	IEC1000-4-3(1995)	3V/m
	IEC1000-4-4(1995)	1kV - (power line), 0.5kV - (signal line)

This product complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC.

Warning! Do not plug a phone jack connector in the RJ-45 port. This may damage this device.

D. Warranty

We warrant to the original owner that the product delivered in this package will be free from defects in material and workmanship for a period of warranty time from the date of purchase from us or the authorized reseller. The warranty does not cover the product if it is damaged in the process of being installed. We recommend that you have the company from whom you purchased this product install it.