SICOM3170 Series Managed

Traffic Ethernet Switch

Quick Installation Manual

KYLAND Technology Co., Ltd.

First Edition-Jul. 2010

www.kyland.cn

Industrializing the Ethernet

Simplifying Industrial Communication

P/N: 1.12.02.0034-0

1. Packing list

The package list includes the following items:

SICOM3170 Managed Traffic Ethernet switch	1
RJ45 to DB9 Console port cable	1
Customer Service Guideline	1
Screw-driver	1
Protective caps for RJ45 ports	9
Protective caps for SFP ports	2
Quick Installation Manual	1
CD for User's Manual	1

NOTE: After unpacking,please check the accessories and the appearance of the equipment,if anything is missing or damaged,please contact us.

2. Product Overview

SICOM3170 is an ultra low power consumption (7.2W) managed traffic Ethernet switch specially designed by KYLAND Technology CO., LTD. for traffic control\intelligent transport system. Its high-performance switch engine, solid and sealed case, over current, overvoltage and EMC protection at power input terminal, and excellent EMC protection of RJ45 port make SICOM3170 run well in harsh and dangerous industrial environments. The SICOM3170 Traffic Signal Control switch is the first of a series of EZ Traffic Networks products from Kyland and a continuation of our "Green Ethernet" product line.

SICOM3170 is inserted into a rack through the rail slots. SICOM3170 provides 2 uplink redundant Gigabit pluggable SFP slots in the front panel which can form Gigabit fiber redundant ring network with the recovery time less than 50ms,

1 10/100/1000Base-T(X) RJ45 port and 7 10/100Base-T(X) RJ45 ports. Each of RJ45 port supports self-adaptive function and MDI/MDI-X auto-connection.

3. Product Features

Interface

Gigabit SFP slots: 2 Gigabit SFP slots for 100/1000Base-SX/LX/LH/ZX, LC interface modules

Gigabit copper port: 1×10/100/1000Base-T(X) self-adaptive RJ45 port

100M copper ports: 7×10/100Base-T(X) self-adaptive RJ45 ports

CONSOLE interface: RS232, RJ45

Standards

IEEE 802.3, IEEE 802.3u, IEEE 802.3x, IEEE 802.3z, IEEE 802.3ab, IEEE 802.1d, IEEE 802.1w, IEEE 802.1p, IEEE 802.1q, store and forward switching mode

Backplane switching capacity

9.6G

MAC address table size:

8K

Cable

Twisted pair: 0-100m

Multi mode fiber: 1310nm, 0-550m (1000Mbps)

Single mode fiber: 1310nm, 0-40km; 1550nm, 0-80km

Power requirements

Power input: 24VDC (9~36VDC)

Power consumption: <7.2W

Physical characteristics

Case: Aluminum case, fanless

Protection class: IP40

Installation: Inserted into a rack through rail slots

Dimensions: (W×H×D): 41.45mm×114mm×167.5mm

The width of the front panel is 58mm and the depth of the handle is 27.5mm.

Weight: 0.8kg

Environmental Limits

Operating Temperature: -40 to 85°C (-40 to 185°F)

Storage Temperature: -40 to 85°C (-40 to 185°F)

Ambient Relative Humidity: 0 to 95% (non-condensing)

WARRANTY

5 years

4. Panel Layout

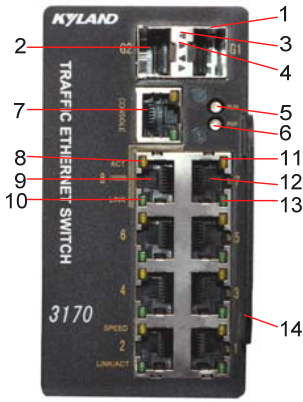


Figure 1 Front panel view

1. G1 , Gigabit SFP slot
2. G2, Gigabit SFP slot
3. G2,LINK/ACT LED
4. G1,LINK/ACT LED

5. RUN (system operation status LED)
6. PWR (power status LED)
7. CONSOLE Interface
8. 10/100/1000Base-T(X) RJ45 port ACT LED
9. 1×10/100/1000Base-T(X) RJ45 port
10. 10/100/1000Base-T(X) RJ45 port LINK LED
11. 10/100Base-T(X) RJ45 port SPEED LED
12. 7×10/100Base-T(X) RJ45 ports
13. 10/100Base-T(X) RJ45 port LINK/ACT LED

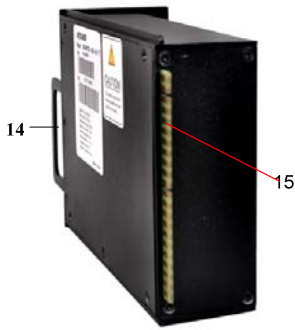


Figure 2 Rear panel view

14. Handle
15. Golden finger for power connection

5. Ports

Gigabit SFP slot

SICOM3170 supports 2×Gigabit SFP ports,Ports ID:G1, G2.(optional) 1000Base-SX/LX/LH/ZX,LC connector

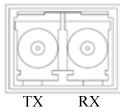


Figure 3 SFP slot **Figure 4 1000BaseSX/LX/LH/ZX port**

10/100/1000Base-T(X) RJ45 port

SICOM3170 supports 1×10/100/1000Base-T(X) RJ45 port ,Ports ID:8.

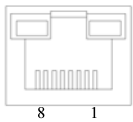


Figure 5 RJ45 8-Pin Jack

Table 1 10/100/1000Base-T(X) RJ45 port pin definition

RJ-45 8-Pin Jack	MDI/MDI-X Signal Name
1	TD0+
2	TD0-
3	TD1+
4	TD2+
5	TD2-
6	TD1-
7	TD3+
8	TD3-

10/100Base-T(X) RJ45 port

SICOM3170 supports 7 个 10/100Base-T(X) RJ45 ports ,Ports ID:1-7.

Table 2 10/100Base-T(X) RJ45 port pin definition

RJ-45 8-Pin	MDI/NIC port	MDI-X/Switch port

Jack	Signal Name	Signal Name
1	Tx+	Rx+
2	Tx-	Rx-
3	Rx+	Tx+
6	Rx-	Tx-

RS-232 (10-pin RJ45) console port

SICOM3170's console port is a Shielded RJ45 modular jack .The standard of serial ports is 3-wire RS232,.supplying RJ45 plug —DB9F plug console cable ,which connect the console port with the 9-pin serial port at the computer.. using CLI to configure sicom3170

Table 3 console port pin definition

RJ-45 8-Pin Jack	Signal Name	Signal Description
2	TxD	Transmitted Data
3	RxD	Received Data
5	SGND	Signal Ground

Golden finger for power connection

SICOM3170 has golden finger to connect with plug.12VDC or 24VDC power supply is offered by the cabinet backplane

Table 4 Golden finger Description

Golden finger 22-Pin plug	Signal Name	Signal Description
A	-	INPUT -
B	+ 24VDC	INPUT +
L	GND	Chassis Ground

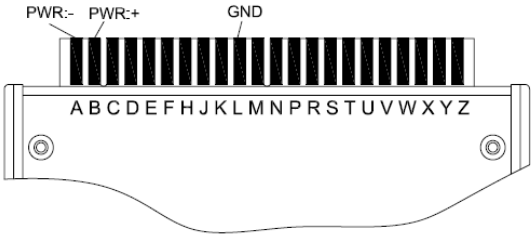


Figure 6 Golden finger for power connection

6. LED indicators

The LED indicators in the front panel of SICOM3170 can indicate system operation status and port status in order to find and settle faults. Table 5 shows the meanings of LEDs in the front panel.

Table 5 LED indicators

LED	State	Description
system status LEDs		
RUN (Green)	Blinking	Switch operates normally
	OFF	Switch does not operate or operate abnormally.
PWR (Green)	ON	Power is connected and operates normally.
	OFF	Power is not connected or operates abnormally.
Gigabit fiber port status LEDs (G1 and G2)		
LINK/ACT (Green)	On	Effective network connection in the port
	Blinking	Network activities in the port
	Off	No effective network connection in the port
Gigabit copper port status LEDs (G8)		
LINK (Green)	On	Effective network connection in the port

	Off	No effective network connection in the port
ACT (Yellow)	On	Network activities in the port
	Off	No network activities in the port
Ethernet RJ45 port status LEDs (1-7)		
Each RJ45 Ethernet port has two indicators, a yellow lamp and a green lamp. The yellow lamp indicates port rate, and the green lamp indicates port connection state.		
SPEED (Yellow)	On	100M working state （i.e. 100Base-TX）
	Off	10M working state (i.e. 10Base-T）
LINK/ACT （Green）	On	Effective network connection in the port
	Blinking	Network activities in the port
	Off	No effective network connection in the port

7. Installation

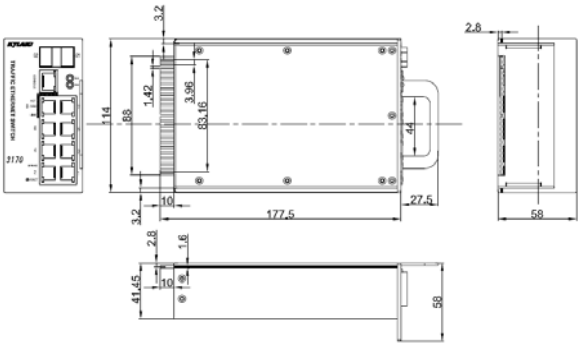


Figure 7 Dimension drawing

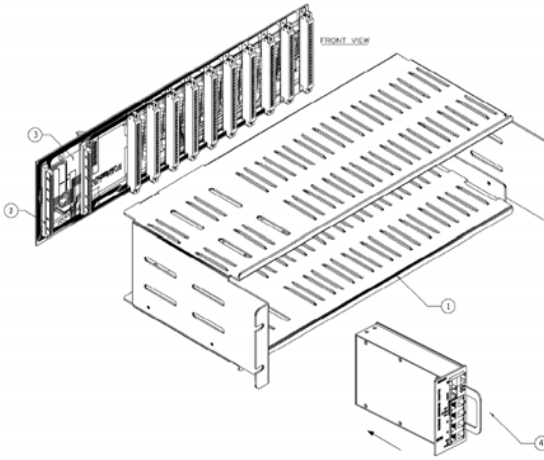


Figure 8 Mounting on the rack

Note: 1: Rack for mounting; 2: Power socket; 3: Back panel; 4: SICOM3170

8. Self inspection

After the equipment is powered on, PWR LED will stay on for 2 seconds. The device will begin the initialization process, the RUN LED will blink after the device completes the initialization process after 30 seconds.

9. Login WEB management

1) Using cross-over cable or straight-through cable to connect a Ethernet port in the switch with the network card of PC through Ethernet. Type the IP address of switch in IE browser, such as IP is 192.168.0.2, press “Enter” key, you can see the page as Figure9. Enter the default username “admin” and the default password “123”, click “Sign in” to enter the WEB’s main page.

The default IP address: 192.168.0.2

The default username: admin

The default password: 123

Figure 9 Log in page

2) Password recovery. The username cannot be changed, you only need to recover the password while don't know the password. Please login the device through console port or telnet, input following command to recover the password under Config mode:

   (config)#web-authentication password <password>

   <password> can be 1-32 numbers or alphabets.

   For example, if you want to change the password into 1234, please input:

   web-authentication password 1234

3) The main page is as Figure10. At the left of the page, there is a management tree menu which includes the main menus of Device Status, Basic Configurations, Advanced Configurations, Device Management, Save Configurations, Load Default.

   Click each main menu to open its sub menu.

   There are two function keys on the tree menu: Collapse and Expand

   Click on "expand" to display the main menu and all sub-menus.

   Click on "collapse" to display the main menu and close all sub-menus.

Figure 10 Main page

10. CLI management

Log in Command Line Interface through two ways: CONSOLE Interface and Telnet

CONSOLE Interface

1）Using the network cable one end is a RJ45 connector and the other is a serial port to connect the serial port from the PC with the CONSOLE interface on the SICOM3170.

2）In the desktop of Windows, click “ Start”- “Program”- “Accessories”-“Communication”-“Hyper Terminal”.

Setting the parameters of the PC serial port as below:

Table 6 Setting the parameters of the PC serial port

Baud Rate	9600
Data Bits	8
Parity Check	None
Stop Bit	1
Flow control	None

3）Open the hyper terminal and power on the device. In the process of device startup, print the device information on the hyper terminal page. When the device startup complete, press “Enter” key, then you can see a prompt

in the serial port (default is “SWITCH>”).

4）When command prompt appears in CLI, type “enable” to enter command line operation mode, there will be a command prompt “SWITCH#”.

```
SWITCH>enable
```

/General users configuration mode

```
SWITCH#config terminal
```

/Authorized users configuration mode

```
SWITCH(config)#
```

/Global configuration mode

```
SWITCH(config)#ip address <ip-address> mask <mask>
```

/IP address configuration

```
SWITCH(config)#ip gate <ip-address>
```

/Gateway address configuration

```
SWITCH#show interface
```

/IP address query

```
SWITCH#reboot
```

/Device reboot

```
SWITCH#load default
```

/Restore default configuration

5）Please check the detail in “CLI Configuration Manual”.

TELNET

1）Using cross-over cable or straight-through cable to connect a Ethernet port in the switch with the network card of PC through Ethernet.

2）Type “ telnet 192.168.0.2” in “Operation” window in Windows system or MS-DOS command prompt, click “ apply”

3）After the switch startup complete, press “Enter” key, Default is “SWITCH>”.

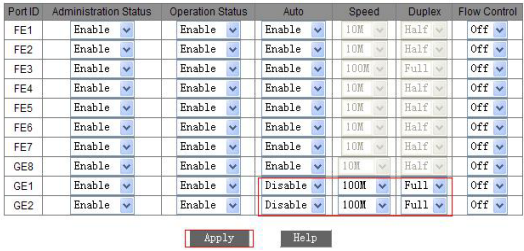
4）Please check the detail in “CLI Configuration Manual”

11. Configurations to use 100M SFP module in 3170 Gigabit SFP slot

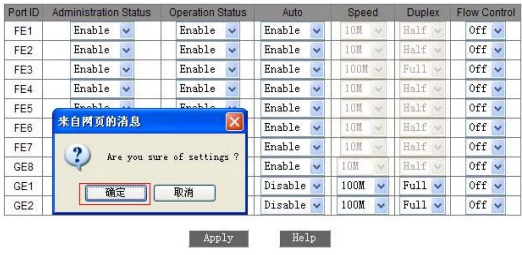
Gigabit SFP modules can be used in SICOM3170 Gigabit SFP slot. But if you need to use 100M SFP modules to connect a 100M fiber network, please use Kyland suggested 100M SFP modules and change the configuration according to the following instructions.

1）Web Interface:

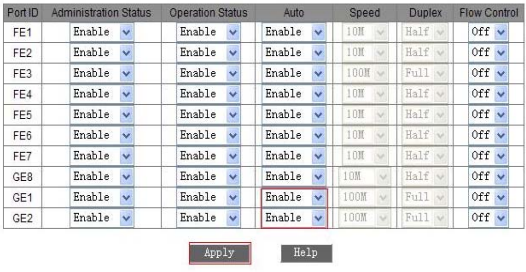
Log in web interface, click"port configuration" set status of GE1/GE2 as 100M full-duplex, and disable the "Auto",click "Apply",.see picture below



click "OK",see picture below



click "port configuration" set status of GE1/GE2 : enable the "Auto",click "Apply, see picture below



click “OK”,see picture below:

click” save configuration”and then 100M SFP module is available. See picture below

2）CLI Command:

Log in the device through Console or Telnet:

```
SWITCH>en
```

/ enter configuration mode

```
SWITCH#configure terminal
```

/enter port configuration mode

```
SWITCH(config)#interface ethernet 9-10
```

/ set status of GE1/GE2 : 100M full-duplex. auto disable

```
SWITCH(config-if-eth9-10)#no
auto-negotiation
SWITCH(config-if-eth9-10)#duplex
SWITCH(config-if-eth9-10)#speed 100m
```

/Enable the “Auto-negotiation”

```
SWITCH(config-if-eth9-10)#auto-negotiation
```

/Do the same with Port 10 and go back to the main menu, click” save configuration”and then 100M SFP module is available.

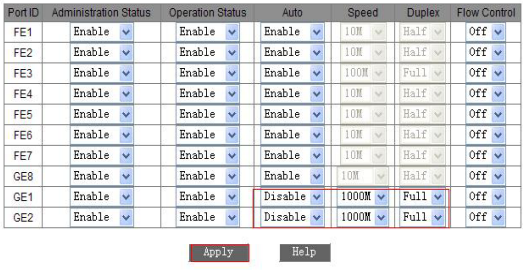
```
SWITCH(config-if-eth9-10)#end
SWITCH#save
```

NOTE;1. Gigabit SFP Module can be used as default, .the default status of the port is 1000M.full-duplex. auto disable

Configurations of switching back to Gigabit SFP module status.

1）Web Interface:

Log in web interface, click”port configuration” set status of GE1/GE2 : 1000M full-duplex. auto disable,click ”Apply”,.see picture below::



click “OK”,see picture below:

click" save configuration"and then SFP module with 1000M is available.

2）CLI Command:

Log in the device through Console or Telnet:

```
SWITCH>en
```

/ enter configuration mode

```
SWITCH#configure terminal
```

/enter port configuration mode

```
SWITCH(config)#interface ethernet 9-10
```

/set status of GE1/GE2 : 1000M full-duplex. auto disable

```
SWITCH(config-if-eth9-10)#no
auto-negotiation
SWITCH(config-if-eth9-10)#duplex
SWITCH(config-if-eth9-10)#speed 1000m
```

/ Do the same with Port 10 and go back to the main menu, click" save configration"and then SFP module with 1000M is available.

```
SWITCH(config-if-eth9-10)#end
SWITCH#save
```

12. User Manual

CD for User's Manual is attached. (PDF Format)

KYLAND

For further information about Kyland, please visit our website www.kyland.cn.

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