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## **Interface Configuration**



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## Feedback

Comments and questions about how the ... system software works are welcomed. Please review the FAQ in the related manual, and if your question is not covered, send email by using the following web page:

<http://www.raisecom.com/en/xcontactus/contactus.htm>.

If you have comments on the ... specification, instead of the web page above, please send comments to:

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We hope to hear from you!

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**Release Notes**

Date of Release	Manual Version	Software Version	Revisions

# Preface

## About This Manual

This manual introduces primary functions of the configuration management software for RC series products.

## Who Should Read This Manual

This manual is a valuable reference for sales and marketing staff, after service staff and telecommunication network designers. For those who want to have an overview of the features, applications, structure and specifications of ... device, this is also a recommended document.

## Relevant Manuals

《Raisecom NView System User Manual》

《Raisecom Nview System Installation and Deployment Manual》

《... User Manual》

《... Commands Notebook》

## Organization

This manual is an introduction of the main functions of ... EMS. To have a quick grasp of the using of the EMS of ... , please read this manual carefully. The manual is composed of the following chapters

### Chapter 1 Overview

This chapter briefly introduces the basic function of ...

### Chapter 2 Configuration Management

This chapter mainly introduces the central site configuration management function of the ....

### Chapter 3 Performance Management

This chapter focuses on performance management function of ....

### Chapter 4 Device Maintenance Management

This chapter introduces the device maintenance management function of ....

### Appendix A Alarm Type

The alarm types supported by ....

## Compliance

The RC series products developed by Raisecom are strictly complied with the following standards as well as ITU-T, IEEE, IETF and related standards from other international telecommunication standard organizations:

YD/T900-1997 SDH Equipment Technical Requirements - Clock

YD/T973-1998 SDH 155Mb/s and 622Mb/s Technical conditions of optical transmitter module and receiver module

YD/T1017-1999 Network node interface for the Synchronous Digital Hierarchy (SDH)

YD/T1022-1999 Requirement of synchronous digital hierarchy (SDH) equipment function

YD/T1078-2000 SDH Transmission Network Technique Requirements-Interworking of Network Protection Architectures

YD/T1111.1-2001 Technical Requirements of SDH Optical Transmitter/Optical Receiver Modules——2.488320 Gb/s Optical Receiver Modules

YD/T1111.2- 2001 Technical Requirements of SHD Optical Transmitter/Optical Receiver Modules——2.488320 Gb/s Optical Transmitter Modules

YD/T1179- 2002 Technical Specification of Ethernet over SDH

G.703 Physical/electrical characteristics of hierarchical digital interfaces

G.704 Synchronous frame structures used at 1544, 6312, 2048, 8448 and 44 736 kbit/s hierarchical levels

G.707 Network node interface for the synchronous digital hierarchy (SDH)

G.774 Synchronous digital hierarchy (SDH) - Management information model for the network element view

G.781 Synchronization layer functions

G.783 Characteristics of synchronous digital hierarchy (SDH) equipment functional blocks

G.784 Synchronous digital hierarchy (SDH) management

G.803 Architecture of transport networks based on the synchronous digital hierarchy (SDH)

G.813 Timing characteristics of SDH equipment slave clocks (SEC)

G.823 The control of jitter and wander within digital networks which are based on the 2048 kbit/s hierarchy

G.825 The control of jitter and wander within digital networks which are based on the synchronous digital hierarchy (SDH)

G.826 End-to-end error performance parameters and objectives for international, constant bit-rate digital paths and connections

G.828 Error performance parameters and objectives for international, constant bit-rate synchronous digital paths

G.829 Error performance events for SDH multiplex and regenerator sections

G.831 Management capabilities of transport networks based on the synchronous digital hierarchy (SDH)

G.841 Types and characteristics of SDH network protection architectures

G.842 Interworking of SDH network protection architectures

G.957 Optical interfaces for equipments and systems relating to the synchronous digital hierarchy

G.691 Optical interfaces for single channel STM-64 and other SDH systems with optical amplifiers

G.664 Optical safety procedures and requirements for optical transport systems

I.731 ATM Types and general characteristics of ATM equipment

I.732 ATM Functional characteristics of ATM equipment

IEEE 802.1Q Virtual Local Area Networks (LANs)

IEEE 802.1p Traffic Class Expediting and Dynamic Multicast Filtering

IEEE 802.3 CSMA/CD Access Method and Physical Layer Instruction



# Chapter 1 Interface Configuration

## 1.1 Physical ports features

For a switch, whatever the equipment is, physical interface is necessary for connection. And physical ports have many features, any message that is entering or leaving the switch needs physical ports to transmit, so the function of physical port is relatively more difficult, which is also very important; to some of the function manual configuration is available, like port rate, duplex mode, negotiation mode, crossover cable automatic recognition and system maximum transmission unit, all of which are the features of the physical ports. To the certain use, the corresponding setting is needed for the physical port to receive or transmit messages.

## 1.2 The default configuration for physical ports

By default, the physical port commands is shown below:

Command	Default value
Rate configuration	The rate of electronic port and 100M optical port is auto negotiated, 100M optical port rate is 100M by default
Duplex mode configuration	The rate of electronic port and 100M optical port is auto negotiated, 100M optical port in duplex is full duplex
Rate control configuration	Physical port rate control function is off
Crossover Ethernet cable auto-recognition and straight Ethernet cable function	Normal mode
Port maximum transmission unit	1522 byte
Interface on/off configuration	on

## 1.3 Rate and duplex mode configuration

Gigabit port is always working in 1000Mbps and full duplex mode. When auto negotiation function is enabled, the duplex mode (speed) will be set according to the result auto negotiation. In default situation, auto negotiation is enabled for all the electronic ports and 1000M optical port, only the default value of 100M optical port is 100M/FD.

Rate and duplex mode configuration step is shown below:

Step	Command	Description
------	---------	-------------

1	config	Enter global configuration mode.
2	<b>interface port</b> <i>port-number</i> <b>interface range</b> <i>port-list</i>	Enter Ethernet physical interface configuration mode or physical interface range configuration mode.  <i>port_number</i> is the physical interface, range is 1-26.  <i>port-list</i> range is 1-26, use “,” and “-“for multiple interfaces configuration.
3	<b>speed</b> { auto   10   100   1000 } <b>duplex</b> { full   half }	Set the speed and duplex mode of the port.  <i>auto</i> : represents that both the speed and duplex are set according to the result of auto negotiation.  <i>10</i> : represents that the speed is set to 10Mbps.  <i>100</i> : represents that the speed is set to 100Mbps.  <i>1000</i> : represents that the speed is set to 1000Mbps.  <i>full</i> : set the duplex mode to full duplex.  <i>half</i> : set the duplex mode to half duplex.
4	<b>exit</b>	Exit from Ethernet physical interface configuration mode to global configuration mode.
5	<b>exit</b>	Exit from global configuration mode to privileged EXEC mode
6	<b>show interface port</b> <i>port-number</i>	Show the status for the port.  <i>port_number</i> physical port,

△ Notice:

- Using the Ethernet interface configuration mode **speed auto**, the rate and duplex mode will be restored to auto negotiation by default.
- Different ports fit different rate and duplex mode. 100M electronic ports can not be set to 1000M, 100M optical port can be set to 100M/FD only, 1000M optical port can be only configured 1000M/FD/auto, while daughter card port can not be configured rate and duplex mode when the daughter card does not exist.

Example 1: set the speed of port 15 to 10Mbps, duplex mode is full duplex.

Raisecom#**config**

ISCOM2826(config)#**interface port 15**

ISCOM2826(config-port)#**speed 10**

ISCOM2826(config-port)# **duplex full**

ISCOM2826(config-port)#**exit**

ISCOM2826(config)#**exit**

Raisecom#**show interface port 15**

R: Receive Direction

S: Send Direction

Port	Admin	Operate	Speed/Duplex	Flowcontrol(R/S)	Mac-learning
15	enable	down	10/full	off/off	enable

Example 2: set the rate of 100M optical port to 10Mbps, duplex mode is semiduplex.

Raisecom#**config**

Raisecom(config)#**interface port 1**

Raisecom(config-port)#**speed 10**

Port 1 only supports 100M/FD!/ port1 support only100M/FD!

Raisecom(config-port)# **duplex half**

Port 1 only supports 100M/FD!/ port1 support only 100M/FD!

Example 3: set 1000M optical port P2 to 100Mbps, duplex mode is semiduplex

Raisecom#**config**

Raisecom(config)#**interface port 2**

Raisecom(config-port)#**speed 100**

Port 2 only supports 1000M/FD or auto-negotiation!/ port 2 support only 100M/FD or auto negotiation.

Raisecom(config-port)# **duplex half**

Port 2 only supports 1000M/FD or auto-negotiation!/ port 2 support only 100M/FD or auto negotiation.

Example 4: set 100M electronic port P3 to 1000Mbps

```
Raisecom#config
```

```
Raisecom(config)#interface port 3
```

```
Raisecom(config-port)#speed 1000
```

Port 3 does not support 1000M!/port 3 do not support 1000M!

Example 5: set daughter card P25 to 1000Mbps

```
Raisecom#config
```

```
Raisecom(config)#interface port 25
```

```
Raisecom(config-port)#speed 1000
```

Port 25 is unavailable!/ port 25 does not exist.

## 1.4 Configure IEEE 802.3X flow control function

The flow control function of Raisecom series switches is set on both RX and TX direction, that is to say, you can set the interface's ability to receive and send pause frame to on/off separately. By default, flow control function is disabled on both directions. On the daughter card side, without the corresponding daughter card inserted, the flow control commands fail.

Step	Command	Description
1	config	Enter global configuration mode
2	<b>interface port</b> <i>port-number</i> <b>interface range</b> <i>port-list</i>	Enter Ethernet physical interface configuration mode or range configuration mode.  <i>port_number</i> physical ports, range is 1-26.  <i>port-list</i> , range is 1-26,use “,” and “-” for multiple ports.
3	<b>flowcontrol {receive send}{ on   off }</b>	Enable/disable the flow control function on RX and TX direction.  Send <b>represents the traffic control function at TX direction.</b>

		<b>Receive</b> represents the traffic control function at RX direction.
		<b>on</b> enable the flow control function of the port.
		<b>off</b> disable the flow control function of the port.
<b>4</b>	<b>exit</b>	Exit from the physical interface configuration mode and enter global configuration mode.
<b>5</b>	<b>exit</b>	Exit from global configuration mode and enter privileged EXEC mode.
<b>6</b>	<b>show interface port</b> <i>port-number</i>	Show the traffic control of the port.  <i>port_number</i> physical port number, range is 1-26.

Example 1: Set the flow control for port 10.

Raisecom#**config**

ISCOM2826(config)# **interface port 10**

ISCOM2826(config-port)#**flowcontrol receive on**

ISCOM2826(config-port)#**exit**

ISCOM2826(config)#**exit**

Raisecom#**show interface port 10**

R: RX Direction

S: tx Direction

Port	Admin	Operate	Speed/Duplex	Flowcontrol(R/S)	Mac-learning
10	enable	down	auto	on/off	enable

Example 2: set the daughter card P25 flow control function on.

Raisecom#**config**

Raisecom(config)#**interface port 25**

Raisecom(config-port)# **flowcontrol on**

Port 25 is unavailable! 端口 25 不存在!

For some equipments, the flow control situation of the ports' receiving direction and sending direction is

configured respectively. By default all the ports' flow control is off.

Step	Command	Description
1	<b>config</b>	Enter global configuration mode
2	<b>interface port</b> <i>port-number</i> <b>interface range</b> <i>port-list</i>	Enter physical port mode or interface range configuration mode. <i>port-number</i> physical port number, range is 1-26 <i>port-list</i> port list, range is 1-26, use ',' and '-' for multiple setting.
3	<b>flowcontrol</b> {receive send}{ on   off }	Configure physical port flow control function on/off <b>Send</b> strands for the flow control function of the sending direction; <b>Receive</b> strands for flow control function of the receiving direction; <b>on</b> enable interface flow control function; <b>Off</b> disable interface flow control function
4	<b>exit</b>	Quit physical port configuration mode and enter global configuration mode
5	<b>exit</b>	Quit global configuration mode and enter privileged EXEC mode
6	<b>show interface port</b> <i>port-number</i>	Show interface flow control state; <i>port-number</i> physical port number.

For example: set port 10 flow control function on receiving direction to on.

Raisecom#**config**

Raisecom(config)#**interface port 10**

Raisecom(config-port)#**flowcontrol receive on**

Raisecom(config-port)#**exit**

Raisecom(config)#**exit**

Raisecom#**show interface port 10**

R: Receive Direction

S: Send Direction

Port	Admin	Operate	Speed/Duplex	Flowcontrol(R/S)	Mac-learning
------	-------	---------	--------------	------------------	--------------

-----

10	enable	down	auto	on/off	enable
----	--------	------	------	--------	--------

For some equipments, the flow control situation of the ports' receiving direction and sending direction is configured respectively, but the result take effect at the same time, that is to say, changing the flow control setting of any direction will effect the flow control configuration of both side, on or off at the same time. By default all the ports' flow control is off.

Step	Command	Description
1	config	Enter global configuration mode
2	interface port <i>port-number</i>  interface range <i>port-list</i>	Enter physical port mode or interface range configuration mode;  <i>port-number</i> physical interface number;  <i>port-list</i> port list, use ',' and '-' for multiple setting.
3	flowcontrol {receive send} { on   off }	Configure physical port flow control function on/off  Send strands for the flow control function of the sending direction;  Receive strands for flow control function of the receiving direction;  on enable flow control function  Off disable port flow control function
4	exit	Quit physical port configuration mode and enter global configuration mode;
5	exit	Quit global configuration mode and

		enter privileged EXEC mode;
6	show interface port <i>port-number</i>	Show the port flow control state <i>port_number</i> physical port number.

For example: enable port 10 flow control function

```
Raisecom#config
Raisecom(config)# interface port 10
Raisecom(config-port)#flowcontrol receive on
Raisecom(config-port)#exit
Raisecom(config)#exit
Raisecom#show interface port 10
```

R: Receive Direction  
S: Send Direction

Port	Admin	Operate	Speed/Duplex	Flowcontrol(R/S)	Mac-learning
10	enable	down	auto	on/on	enable

### 1.5 Auto-MDIX function configuration

The function of Auto-MDIX is to auto-recognize crossover Ethernet cable and straight Ethernet cable. The configuration step is show below:

Ste	Command	Description
p		
1	config	Enter global configuration mode
2	interface port <i>port-number</i> interface range <i>port-list</i>	Enter physical port mode or interface range configuration mode; <i>port_number</i> physical interface number; <i>port-list</i> port list, use ‘,’ and ‘-’ for multiple setting.
3	mdi (auto  normal  across)	Configure port MDI mode; auto linear ordering auto reserve mode normal normal mode across cross mode
4	exit	Quit physical port configuration



		mode and enter global configuration mode
		mode
5	exit	Quit global configuration mode and enter privileged EXEC mode
6	show mdi [<1-MAX_PORT_STR>]	Show port MDI state <1-MAX_PORT_STR>physical port

For example: set port 8 Auto-MDIX function to auto mode.

Raisecom#**config**

Raisecom(config)# **interface port 8**

Raisecom(config-port)#**mdi auto**

Raisecom(config-port)#**exit**

Raisecom(config)#**exit**

Raisecom#**show mdi 8**

Port 8 MDI mode :auto Current status :across

## 1.6 Line detection function

Line detection function is to detect the Ethernet port connection line, by which user can look over the state of the physical lines. The line information acquired from line detection module includes:

Detect line state:

Normal- line connection is normal

Open- circle open

Shorted- circle shorted

Error- error

Detect error position

The line sends error position

The line receives error position

Step	Command	Description
1	test cable-diagnostics port-list (all   <i>portlist</i> )	Begin cable diagnoses. <i>all</i> all the physical ports <i>portlist</i> physical ports list
2	show cable-diagnostics port-list (all   <i>portlist</i> )	Show cable diagnoses information <i>all</i> all the physical ports <i>portlist</i> physical ports list

For example: run cable diagnoses and show the result.

Raisecom#test cable-diagnostics port-list all

Raisecom#show cable-diagnostics port-list all

Port	Attribute	Time	RX Stat	RX Len(m)	TX Stat	TX Len(m)
-----						
1	Issued	01/01/2000 08:05:33	Open	1	Open	1
2	Issued	01/01/2000 08:05:33	Open	1	Open	1
3	Issued	01/01/2000 08:05:34	Open	1	Open	1
4	Issued	01/01/2000 08:05:34	Open	1	Open	1
5	Issued	01/01/2000 08:05:34	Open	1	Open	1
6	Issued	01/01/2000 08:05:34	Open	1	Open	1
7	Issued	01/01/2000 08:05:34	Open	1	Open	1
8	Issued	01/01/2000 08:05:34	Normal	0	Normal	0
9	Issued	01/01/2000 08:05:34	Open	1	Open	1
10	Issued	01/01/2000 08:05:34	Open	1	Open	1
.....						
24	Issued	01/01/2000 08:05:34	Open	1	Open	1
25	Not Support	N/A	N/A	0	N/A	0
26	Not Support	N/A	N/A	0	N/A	0

Explain:

States:

- a) Normal- line connection normal
- b) Open- circle open
- c) Shorted- circle shorted
- d) Error- error
- e) N/A- invalid

Attribution:

- a) Issued- test over
- b) Not Issued- no test
- c) Testing- testing
- d) Not Support- not support

## 1.7Maximum transmission unit configuration

Ste	Command	Description
p		

1	config	Enter global configuration mode
2	system mtu <1500-8000>  no system mtu	Set maximum transmission unit; <1500-8000> system maximum transmission unit range;  Delete maximum transmission unit configuration
3	exit	Quit global configuration mode and enter privileged EXEC mode
4	show system mtu	Show system maximum transmission unit configuration

For example: set system maximum transmission unit to 5000.

Raisecom#**config**

Raisecom(config)# **systemc mtu 5000**

Raisecom(config)#**exit**

Raisecom#**show system mtu**

System MTU size: 5000 bytes

## 1.8 Add description for interfaces

As needed, physical ports, IP ports can be added description.

Step	Command	Description
1	config	Enter global configuration mode
2	interface port <i>port-number</i>	Enter physical layer port configuration mode or volume configuration mode  <i>port_number</i> physical port number, range is 1-26
3	[no]description <i>WORD</i>	Add physical port or IP interface description  <i>WORD</i> ——specify class-map description. 255 character the most, can not be departed by space.
4	exit	Quit physical layer port configuration mode and enter global configuration mode.
5	exit	Quit global configuration mode and enter privileged EXEC mode.

6	show interface port [<1-MAXPORT>] detail	Show port information  <1-MAXPORT> port number.
---	--	---

Example 1: add decription for physical port 20.

Raisecom#**config**

Raisecom(config)# **interface port** 20

Raisecom(config-port)# **description** *this-is-a-class-map*

Raisecom(config-port)#**exit**

Raisecom(config)#**exit**

Raisecom#**show interface port 20 detail**

## 1.9 Open and close physical layer port

Sometimes, for a certain intention, to close physical ports is needed, and configuring the ports' on/off is necessary. By default all the ports are on. To daughter port, physical port on/off commands are invalid when the card is not inserted.

Ste p	Command	Description
1	config	Enter global configuration
2	interface port <i>port-number</i> interface range <i>port-list</i>	Enter physical layer port configuration mode or volume configuration mode.  <i>port_number</i> physical port number.  <i>port-list</i> port list, use ',' and '-' to make multi-port input.
3	{ shutdown   no shutdown }	Close or open physical port.  shutdown stands for closing physical port.  no shutdown stands for opening physical port.
4	exit	Quit physical layer interface configuration mode and enter global configuration mode
5	exit	Quit global configuration mode and enter privileged EXEC mode.
6	show interface port <i>port-number</i>	Show port state  <i>port_number</i> physical port number.

Example 1: close port 20.

```
Raisecom#config
```

```
Raisecom(config)# interface port 20
```

```
Raisecom(config-port)#shut down
```

```
Raisecom(config-port)#exit
```

```
Raisecom(config)#exit
```

```
Raisecom#show interface port 20
```

R: Receive Direction

S: Send Direction

Port	Admin	Operate	Speed/Duplex	Flowcontrol(R/S)	Mac-learning
20	enable	down	auto	off/off	enable

Example 2: close daughter card port P25 (without daughter card inserted)

```
Raisecom#config
```

```
Raisecom(config)#interface port 25
```

```
Raisecom(config-port)# shut down
```

Port 25 is unavailable!

## 1.10 Monitoring and maintaining

Use **show** to show port state.

Command	Description
<b>show interface port</b> <i>port-number</i>	Show port state  <i>port_number</i> physical port number.
<b>show interface port</b> [<1-MAXPORT>] <b>detail</b>	Show port information.  <1-MAXPORT> port number.

For example: show port 8 state.

```
Raisecom#show interface port 8
```

R: Receive Direction

S: Send Direction

Port	Admin	Operate	Speed/Duplex	Flowcontrol(R/S)	Mac-learning
8	enable	down	auto	off/off	enable



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