



RC702-FE
Ethernet over SDH Device
Command notebook
(V1.0)

Raisecom Technology Co., LTD
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1 Overview

1.1 Introduction

RC702-FE is an Ethernet over SDH device developed by Raisecom Technology Co., LTD, it provides a 155M SDH interface (optical or electronic) and a 100M Ethernet interface (electronic), and encapsulates Ethernet data packets to SDH/SONET payload, so remote Ethernets can be connected through SDH transmission network at a high speed.

The device is available in all the running networks such as: China Telecom, China Unicom, China Mobile, China Netcom and China Broadcast & Television, meanwhile it accords with X.85/X.86 of ITU-T, YD/T 1179-2002 of Ministry of Information Industry and related standards of SDH/SONET.

1.2 Main feathers of RC702-FE

- Provide a 100M Ethernet electronic interface and an extended slot in which a 155M SDH optical or electronic interface module can be put.
- In SDH/SONET optical interface mode, the longest transmission distance is 120km.
- RC702-FE provides Console interface and SNMP network management interface.
- RC702-FE provides SNMP network management function, and accords with the standard specifications of SDH/SONET network management.
- Provide local and remote alarm indicators so it can be installed and maintained conveniently.

1.3 Main functions of RC702 AGENT

RC702 AGENT is used to achieve the SNMP AGENT function, and provides users standard command-line interface.

The agent part of RC702 AGENT is the managed entity of SNMP management system; complete the management, control and operation of SNMP through managing, controlling and operating RC702-FE.

Users can manage and operate the device through CONSOLE locally or TELNET remotely, for example: configure SNMP Agent, operate device and configure system parameters.

1.4 Organization

This notebook describes how to use the commands of EOS and includes the following sections:

Chapter 1: Overview

Describe the device and its features generally.

Chapter 2: Device management

Describe the software environment and basic operations of the device.

Chapter 3: EOS configuration management

Describe how to manage and configure EOS device.

Chapter 4: Commands explanation

Explain how to use command and give related example to help understanding.

Note:

“RC701/RC702-FE Ethernet over SDH device” is called “EOS device” for short.

Related reference:

RC701/RC702-FE Ethernet over SDH device application notebook

2 Device management

This chapter describes methods of management.

RC702-FE supports the following management methods:

- Out-of-band management by local serial interface RS-232.
- In-band management by Telnet.
- SNMP management, every device in network can be managed by any computer through SNMP network management software.

2.1 Enter the configuration interface of EOS

2.1.1 Enter command-line interface

RC702-FE provides command-line interface through which the device can be configured and managed. Both simulation program of the terminal and TELNET of TCP/IP are available for device management.

2.1.2 Access the device through local control platform

1. Configure control platform

Configuring the interface:

Baud rate: 9600

Data bits: 8

Stop bit: 1

Parity: no

Flow control: no

Control platform interface connects with all the asynchronous terminals directly.

2. Configure the host

Connect COM1 of the host with console interface of RC702-FE through standard RS232 serial cable, and then run terminal simulation program.

If the OS of host is WINDOWS 98, WINDOWS 2000 or NT 4.0, the host can be configured by system program: Hyper Terminal.

1. In the **start** menu, select **Programs Accessories Communications Hyper Terminal**, run Hyper Terminal.

2. After start up Hyper Terminal, there will be *Connection Description* interface, then enter a name in the *Name* such as Raisecom.

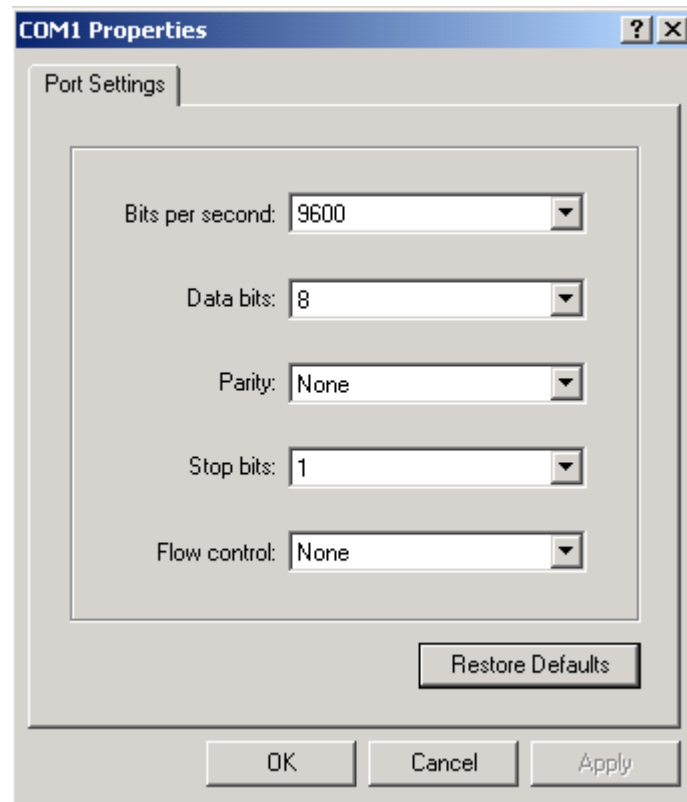


3. Click *OK*, there will be *Connect to* interface as follows:

Choose COM 1 in *Connect using* option, then click *OK*



4. In the *COM 1 Properties* interface configure all the options same with control platform, the values are as follows:



User can save the configuration in a configuration file through **save** option of **file** in the menu, so it can be used the next time.

2.1.3 Login through Telnet

If EOS device is not powered on for the first time and Ethernet IP address has been already configured, then you can login through Telnet by LAN or WAN and configure it.

Steps are as follows:

1. LAN: Connect the host with EOS device through Ethernet.

WAN: Connect the host with EOS device through network devices such as router (make sure that before connecting, IP address and default gateway must be correctly configured).

2. Run host program: Telnet.
3. Configure Telnet terminal options.
4. Enter IP address of EOS device and connect through Telnet.
5. Run normal system commands.

6. Run other configuration commands related to protocols and port.

Note: when configure router through Telnet, do not change Ethernet IP address rashly, if necessary modify it after confirming other parameters.

1. User name and the password are necessary when login through CONSOLE interface and Telnet.

2. If it is the first login, both user name and the password are *admin*, same as privileged user password.

3. *EOS>* indicates the present mode is user EXEC, and in this mode system level operations are not available. Use **enable** command and enter the password (admin) to enter privileged EXEC.

4. More commands are available in the following chapters.

2.2 Introduction of Bootrom startup option

In default case, after being powered on the device will enter startup mode without operation of user.

Access Bootrom menu as following steps:

1 Connect to CONSOLE interface of device, note that terminal has been correctly configured.

2 Power on, and press ESC continuously.

3 Prompt RC702 indicates you have already enter Bootrom menu.

There will be Bootrom menu information after entering ? :

?	- print this list
n	- load and boot from network
f	- load and boot from flash
p	- print boot params
c	- change boot params
e	- erase flash

m - set mac address

Press '?' To get helping information.

Menu options and the meanings of Bootrom:

?: show help information

n: download RC702 AGENT system file through FTP protocol

f: startup RC702 AGENT through system file in flash.

p: show startup parameters

c: configure startup parameters

e: format flash.

m: configure MAC address of Ethernet network management interface.

2.3 Upgrade software

Download software of new version as the following steps through TCP/IP:

1 User who has administrator privilege logs global configuration mode through serial interface or Telnet.

2 Enter the commands:

```
RC702(config)# load ftp 192.168.1.119 program RC702 username Raisecom  
password 123
```

```
Loading, please wait... file length = 3574927
```

```
Writing to flash, please wait...
```

```
.....finished
```

```
You've successfully download new image file
```

Now you can type reboot command to reboot system.

2.4 Restart system

Use **reboot** command to restart EOS device when needed, and consider whether to save the configuration data, if it is necessary, use **write** command.

3 EOS configuration and management

This chapter describes how to configure and manage EOS device by CLI (command-line interface).

3.1 Basic of configuration and management

3.1.1 Command modes of EOS

There are different command modes, and in a given time the number of commands can be used depends on which mode you are in, enter? command and you can get all the commands in one mode. When start to configure EOS device, you begin from user EXEC, and in this mode only part commands are available, so to access all the other commands you should enter privileged EXEC, and then all EXEC commands are available and you can login global configuration mode. In most of the time, EXEC commands are onetime commands, for example: use **clear** command to clear the counter and interface.

In global configuration mode the running parameters can be changed, if changes are saved, they will work when system reboots. You must start from privileged EXEC to access all configuration modes (interface mode or EOS configuration mode). Modes are as follows:

Mode	Prompt	Function
User EXEC	RC702>	Check up simple operation and statistics information of EOS device
Privileged EXEC	RC702#	Check up all operation and statistics information of EOS device and manage users
Global configuration mode	RC702(config)#	Upgrade system, manage configuration file & log and set SNMP parameters
EOS configuration mode	RC702(config-eos)#	Configure work parameters of EOS
Interface	RC702(config-if-eth0)#	Configure parameters of network

configuration mode		management interface
--------------------	--	----------------------

Exchange commands between the modes:

Command	Function
enable	Login privileged EXEC from user EXEC
config	Login global configuration mode from privileged EXEC
interface	Login interface configuration mode from global configuration mode
eos	Login EOS configuration mode from global configuration mode.
exit	Exit from present mode to previous mode (logout from present login in user EXEC and privileged EXEC)
quit	Exit from present login
disable	Exit from privileged EXEC to user EXEC.
logout	Quit from present login in privilege EXEC

3.1.2 Basic operation commands

RC702 AGENT has complete terminal operation commands to manage EOS device, includes:

- Show information in English or Chinese, use **english** or **chinese** command to exchange.
- Configure terminal properties
- Clear the screen
- Change the host name
- Configure system time

Basic command table

Command	Description
chinese	Show help information in Chinese
english	Show help information in English
clear	Clear the screen
exit	Exit from present mode to previous mode (logout from

	present login in user EXEC and privileged EXEC)
quit	Exit from present login
enable	Enter privileged EXEC from user EXEC
disable	Exit from privileged EXEC to user EXEC
history	Show commands that has been entered during this login
list	List all commands in one mode
help	Show help information
terminal history	Set the number of history commands that memory can save
terminal time-out	Set the maximum value of terminal timeout
terminal line	Set the number of rows on terminal, no is by default
logout	Quit from present login in privilege EXEC
hostname	Change system name
settime	Set system time of device
show clock	Show system time and date
interface	Enter interface configuration mode
eos	Enter EOS configuration mode

3.2 User configuration

There are 15 levels of user privilege supported by RC702 AGENT

Normal users (under level 5) can only get in read only mode but not privileged mode; middle level users (level 10-15) can login privileged EXEC to check the majority information.

The following information is not available for normal users:

- User information in system
- Configuration information in system (that is to say the configuration file and global configuration information of system) . System administrator (level 15) can login configuration mode to check all the parameters and system configuration, to add or delete users, change password and configure global information.

3.2.1 Default user and the password

There is a default user name *admin* and the password *admin* (same as privileged password), which privilege level is 15, and this user name can not be deleted or changed but the password is changeable.

3.2.2 Add a user

Add a user in the following steps:

1. Login by user name *admin* (or other administrator name) ;
2. Enter password and get into user EXEC;
3. In user EXEC mode, enter **enable** command, and the password: *admin*, then get into privileged EXEC.
4. You can set a new user name and the password in privileged EXEC.

【command】

user USERNAME password no-encryption PASSWORD

【parameter explanation】

USERNAME is the name to add which must begin with alphabet, capital letters, miniscule letters, numbers and underline are available but the total characters are: 4-16. PASSWORD is the login password which can be any symbols and the total number is 6-16.

【application guide】

The system does not differentiate capital or miniscule letters of user name but differentiate for password. The default privilege level of added user is 15, and you can use **user USERNAME privilege <1-15>** command to change.

【example】

For example: add a user named *manager* and password id *raisecom*

```
RC702(config)# user manager password no-encryption raisecom
```

Set successfully!

3.2.3 Change user privilege

There are 15 levels of user privilege, level 15 is the highest and can operate all command. You can use **user USERNAME privilege <1-15>** command to change the privilege of user:

【command】

```
user USERNAME privilege <1-15>
```

【parameter explanation】

USERNAME is the name to add, <1-15> is the privilege.

【example】

For example: change privilege of normal user *manager* to system administrator (level 15).

```
RC702# user manager privilege 15
```

```
Set successfully !
```

3.2.4 Check up user information

Use the following command to check up user information:

【command】

```
show user
```

【command mode】

Privileged EXEC

【example】

```
RC702# show user
```

```
      User name      priority
```

```
-----
```

```
eos                      15
```

```
zhou                      1
```

3.2.5 Delete a user

Use the following command to delete a user:

【command】

no user USERNAME

【parameter explanation】

USERNAME is the user name to delete.

【example】

For example: delete the user *manager*

```
RC702(config)# no user manager
```

```
delete successfully !
```

3.2.6 Chang the pass word

【command】

password

【application guide】

In privileged EXEC, enter this command and following the prompts to enter the new and old passwords to change.

3.3 Configure SNMP

Configure the following parameter:

Community string: this string is for the purpose of authentication remote management, and there are two types: *ro* just allows reading RC702 and default value is *public*, *rw* allows both reading and writing, default value is *private*.

【related commands】

snmp community COMMUNITYNAME (ro|rw)

no snmp community COMMUNITYNAME

show snmp community

Configure SNMP Trap server

Add an SNMP server

【command】

snmp trap-server A.B.C.D [<1-65535>]

【parameter explanation】

A.B.C.D: IP address that receive SNMP traps

[<1-65535>] number of trap-receiving interface of the host

【default case】

Default number of the interface is 162

【command mode】

Global configuration mode

Delete an SNMP trap server

【command】

no snmp trap-server A.B.C.D

【parameter explanation】

<A.B.C.D> IP address of SNMP trap server host

【command mode】

Global configuration mode

Show information of SNMP trap server

【command】

show snmp trap-server

3.4 Save configuration file

Use write command to save after changing the parameters, the following information means configuration has been saved successfully:

Successfully write to flash

You can also save the configuration in a text and download it to EOS device through FTP protocol when needed (for example: EOS configuration is not usable and can not restore to previous status)

Roles of write configuration file:

When loading configurations, system follows the command order in configuration file. At the beginning, system is in privileged EXEC, and use **config, interface, eos, exit** commands to change mode; when configure every module there must be “!” to separate, every “!” and every command must in a single row. For example:

```
!  
config  
default-route 192.168.1.1  
snmpd  
!  
interface  
ip address 192.168.1.149 255.255.255.0  
exit  
!  
eos  
eos mode gfp  
eos type sonet  
!
```

3.5 Download configuration file through FTP protocol

Step 1: user who has administrator privilege gets into global configuration mode through serial interface or Telnet.

Step 2: enter commands:

```
load ftp A.B.C.D config path/config_filename username USERNAME pass WORD
```

A.B.C.D is IP address of the host which has the configuration file, USERNAME is the name of FTP user, WORD is the password of FTP and path/config_filename is the file name that will be downloaded.

Step 3: after downloading, enter reboot command to restart switch. The following information means loading is successful.

```
Loading, please wait... file length = 175
```

```
Writing to flash, please wait...
```

```
finished
```

```
You've successfully download new startup-config file
```

3.6 Monitor the network performance

EOS device provides **ping** command to monitor the network performance: ping command transmits Internet Control Message Protocol (ICMP) echo to some device which has IP address, **ping** command is available in user EXEC and privileged EXEC. Command is as follows:

```
ping A.B.C.D [count <1-65535>] [size <1-65535>] [timeout <1-255>]
```

All the options in this command can be ignored, and use the simple format. For example:

```
RC702(config)# ping 192.168.1.1
```

This command is used to test whether RC702 connects with the device which IP address is 192.168.1.1, if connects, there will be the following information:

(Type CTRL+C break)

PING 192.168.1.1: 56 data bytes

64 bytes from 192.168.1.1: icmp_seq=0. time=0. ms

64 bytes from 192.168.1.1: icmp_seq=1. time=0. ms

64 bytes from 192.168.1.1: icmp_seq=2. time=0. ms

64 bytes from 192.168.1.1: icmp_seq=3. time=0. ms

----192.168.1.1 PING Statistics----

4 packets transmitted, 4 packets received, 0% packet loss

round-trip (ms) min/avg/max = 0/0/0

if not, there will be the following information:

PING 192.168.1.245: 56 data bytes

no answer from 192.168.1.245

3.7 Configure Ethernet interface

3.7.1 Configure IP address of Ethernet interface

Use **ip address** command to configure IP address of Ethernet interface.

【command】

ip address A.B.C.D [A.B.C.D]

【command mode】

Interface configuration mode

【example】

Set IP address of Ethernet interface.

Use the following command in interface configuration mode:

RC702(config-if-eth0)#ip address 192.168.1.146 255.255.255.0

3.7.2 Configure MTU of the interface

Use **mtu** command to configure the maximum MTU value

【command】

mtu <16-1518>

【parameter explanation】

<16-1518> value of MTU

【command mode】

Interface configuration mode

【example】

For example: set MUT value, use following command after entering interface configuration mode:

```
RC702(config-if-eth0)#mtu 1000
```

Use the following command to restore default value:

```
RC702(config-if-eth0)#no mtu
```

3.7.3 Show interface information

Use following command to check interface status, MAC address, IP address and other information:

【command】

show interface

【command mode】

Privileged EXEC

【example】

For example: show interface information:

```
RC702# show interface
```

motfec (unit number 0):

Flags: (0x8063) UP BROADCAST MULTICAST ARP RUNNING

Type: ETHERNET_CSMACD

Internet address: 192.168.1.145

Broadcast address: 192.168.1.255

Netmask 0xfffff00 Subnetmask 0xfffff00

Ethernet address is 08:00:3e:03:02:11

Metric is 0

Maximum Transfer Unit size is 1500

0 octets received

0 octets sent

4054 packets received

65 packets sent

49 unicast packets received

49 unicast packets sent

4005 non-unicast packets received

16 non-unicast packets sent

0 input discards

0 input unknown protocols

81 input errors

0 output errors

0 collisions; 0 dropped

3.8 Configure EOS properties

Use following commands to configure and check EOS parameters:

eos mode (gfp|laps)

eos type (sonet|sdh)

eos tx-scramble-statue (enable|disable)

show eos counter

show eos status

More information is available in chapter: EOS COMMANDS EXPLANATION

3.9 Log management

Log management commands include:

log on

log off

log clean

show log

More information is available in chapter: EOS COMMANDS EXPLANATION

4 EOS commands explanation

You can access EOS device command-line interface through CONSOLE interface or Telnet. This chapter describes every commands of EOS device, such as description of syntax default value and available range. There application guide in some commands to help understanding.

4.1 Enter command

This section describes how to enter a command

4.1.1 Key words and subject of command

EOS device does not differentiate capital letters and minuscule letters, key words and subject make up a command, and the subject appoints the parameters. For example: in command **terminal line 25**, **terminal line** is key words and 25 is parameter.

- Enter the key word if there is only single key word of a command.
- Enter the key words in turn if there are many key words in a command.
- Enter the parameter after key word if there is.

4.1.2 Simplified command

You only need to enter the head part of the command as long as the system can differentiate from other command. For example: if you want enter command **show log**, and **sh l** is fine because system can differentiate automatically. But make sure that the command is not too short for system to reading, and in that case there will be prompt to remind you entering the left characters.

4.1.3 Complete command

Use Tab key to supplement after entering part of the command. For example: press Tab key after entering **sh**, and system will supplement it to **show**, but remember the command that entered must be long enough for system to differentiate from other commands.

4.1.4 Getting help

Enter **help** to get brief help information from system; or use **?** to show all available commands begin with certain key words.

For example: enter *show ?* there will be all available commands that begin with **show**

RC702# show

arp *Display ARP information*

<i>clock</i>	<i>show system date and time.</i>
<i>eos</i>	<i>Display EOS information</i>
<i>interface</i>	<i>Interface status and configuration</i>
<i>ip</i>	<i>Display information of IP</i>
<i>log</i>	<i>Display log</i>
<i>route</i>	<i>Display route information</i>
<i>running-config</i>	<i>Contentes of running configuration</i>
<i>service</i>	<i>system serive information</i>
<i>snmp</i>	<i>Display snmp information</i>
<i>startup-config</i>	<i>Contentes of startup configuration</i>
<i>tcp</i>	<i>Show TCP information</i>
<i>terminal</i>	<i>terminal information.</i>
<i>user</i>	<i>user information</i>
<i>version</i>	<i>version information</i>

4.1.5 Find commands

Press **?** after some string to find all commands that match it

For example: press **s?** to show all key words that begin with "s"

RC702(config)# s?

<i>settime</i>	<i>Set system time</i>
<i>snmp</i>	<i>SNMP command</i>
<i>snmpd</i>	<i>Open the snmp agent</i>

4.1.6 Disable the command

For many commands ,you can prefix **no** to disable or restore default value.

For example:

terminal line 30 command changes the number of terminal command rows as 30, and

use **no terminal line** to restore default value.

4.1.7 History commands

EOS device can memory entered commands, **history** command can check the commands that has been entered.

4.1.1 Editing properties

Ctrl-A move the cursor to the beginning of the command line

Ctrl-D delete a character at the cursor

Ctrl-E move the cursor to the end of the command line

Ctrl-Y show history commands

Ctrl-K delete all the characters on the right side the cursor

Ctrl-L clear the screen

Ctrl-X delete all the characters on the left side of the cursor

Ctrl-Z exit to privileged EXEC

? get help information

UPARROW_KEY last entered command

DOWNARROW_KEY next entered command

Delete or backspace deletes a wrong character

4.2 System management commands

4.2.1 chinese

show help information in Chinese

【command】

chinese

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Any user mode

【Application guide】

【example】

RC702> chinese

set successfully

【related commands】

english

4.2.2 clear

clear the screen

【command】

clear

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Any user mode

【Application guide】

【example】

EOS>clear

4.2.3 english

show help information in English

【command】

english

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Any user mode

【Application guide】

【example】

RC702> english

Set successfully!

【related commands】

chinese

4.2.4 exit

exit from present mode to previous mode

【command】

exit

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Any user mode

【Application guide】

Quit from present login in user EXEC and privileged EXEC

【example】

```
RC702(config)# exit
```

```
RC702#
```

【related commands】

quit, disable, logout

4.2.5 quit

Quit from present login

【command】

quit

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Any user mode

【Application guide】

【example】

RC702(config)# quit

【related commands】

exit, disable, logout

4.2.6 history

show list of commands entered during this login

【command】

history

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Any user mode

【Application guide】

【example】

RC702# history

enable

disable

...

【related commands】

terminal history

4.2.7 list

show all the commands in one mode

【command】

list

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Any user mode

【Application guide】

【example】

RC702> list

chinese

clear

.....

【related commands】

4.2.8 help

show help information

【command】

help

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Any user mode

【example】

RC702#help

RC702 AGENT software provides advanced help feature. When you need help, anytime at the command line please press '?'.

If nothing matches, the help list will be empty and you must backup until entering a '?' shows the available options.

Two styles of help are provided:

1. Full help is available when you are ready to enter a command argument (e.g. 'show ?') and describes each possible argument.

2. *Partial help is provided when an abbreviated argument is entered and you want to know what arguments match the input (e.g. 'show me?').*

【related commands】

4.2.9 terminal history

【command】

terminal history <1-20>

【parameter explanation】

<1-20> number of history commands

【default case】

20

【command mode】

User EXEC

【example】

RC702> terminal history 10

Set successfully !

【related commands】

history, terminal time-out

4.2.10 terminal time-out

Set maximum value of terminal timeout

【command】

terminal time-out <0-65535>

【parameter explanation】

<0-65535> range of timeout value

【default case】

600s

【command mode】

User EXEC

【Application guide】

【example】

RC702> terminal time-out 1000

Set successfully!

【related commands】

terminal history

4.2.11 terminal line

set the number of terminal command rows, use **no** command to restore default value.

【command】

terminal line <5-512>

no terminal line

【parameter explanation】

<5-512>:rang of terminal command row number

【default case】

24

【command mode】

User EXEC

【example】

RC702# terminal line 30

【related commands】

terminal time-out

4.2.12 logout

exit from present login in privileged EXEC

【command】

logout

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Privileged EXEC

【Application guide】

【example】

RC702# logout

Login:

【related commands】

exit, quit, disable

4.2.13 enable

Enter privileged EXEC from user EXEC

【command】

enable

【parameter explanation】

N/A

【default case】

N/A

【command mode】

User EXEC

【Application guide】

Password of **enable** command is same as login password, and this command is available to users whose privilege level is higher than 5.

【example】

RC702>enable

Password:<password>

RC702#

【related commands】

disable, logout, exit, quit

4.2.14 disable

Exit from privileged EXEC

【command】

disable

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Privileged EXEC

【example】

RC702# disable

RC702>

【related commands】

enable

4.2.15 hostname

Change system name, use **no** command to restore default name.

【command】

hostname HOSTNAME

【parameter explanation】

HOSTNAME system name

【default case】

RC702

【command mode】

Privileged EXEC

【Application guide】

use **write** command to save.

【example】

RC702# hostname raisecom

Set successfully

raisecom#

4.2.16 password

Change password of present login user

【command】**password****【parameter explanation】**

N/A

【default case】

N/A

【command mode】

Privileged EXEC

【Application guide】

Users whose privilege level is higher than 5 can use this command.

【example】*RC702# password**Please input password:admin**Please input again:admin*

Set successfully

【related commands】**user**

4.2.17 user

add a new user

【command】**user USERNAME password (no-encryption|md5) PASSWORD****【parameter explanation】**

USERNAME system name

(no-encryption|md5) whether to encipher

PASSWORD user password

【default case】

N/A

【command mode】

Privileged EXEC

【Application guide】

System does not differentiate capital letters or miniscule letters in user name, but differentiates in password, default privilege of added user is 15 and use **user USERNAME privilege <1-15>** command to change the privilege.

【example】

```
RC702# user raisecom password no-encryption 123456
```

Set successfully

```
RC702# show user
```

<i>User name</i>	<i>priority</i>
------------------	-----------------

<i>RC702</i>	<i>15</i>
--------------	-----------

<i>raisecom</i>	<i>15</i>
-----------------	-----------

【related commands】

password

4.2.18 show terminal

show terminal user information

【command】

show terminal

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Privileged EXEC

【Application guide】

【example】

```
RC702# show terminal
```

<i>terminal</i>	<i>state</i>	<i>time-out</i>	<i>user</i>

<i>console</i>	<i>active</i>	<i>600sec</i>	<i>eos</i>
<i>telnet-1</i>	<i>inactive</i>	-	-
<i>telnet-2</i>	<i>inactive</i>	-	-
<i>telnet-3</i>	<i>inactive</i>	-	-
<i>telnet-4</i>	<i>inactive</i>	-	-
<i>telnet-5</i>	<i>inactive</i>	-	-

【related commands】

who, show log

4.2.19 who

Show who connects system at present, * before a user means he is configuring device now.

【command】

who

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Privileged EXEC

【example】

RC702# who

** vty[2] connected from 101.51.51.81.*

vty[3] connected from 101.51.51.82.

【related commands】

show terminal

4.2.20 show user

show user information

【command】**show user****【parameter explanation】**

N/A

【default case】

N/A

【command mode】

Privileged EXEC

【Application guide】**【example】**

```
RC702# show user
```

User name	priority
-----------	----------

eos	15
-----	----

raisecom	15
----------	----

【related commands】

user, password

4.2.21 show startup-config

Show initial configuration file

【command】

show startup-config

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Privileged EXEC

【example】

```
RC702# sh st
```

!


```
config
snmpd
!
interface
ip address 192.168.1.145 255.255.255.0
exit
!
eos
!
```

【related commands】

write, erase startup-config, show running-config

4.2.22 show running-config

show present running configuration file

【command】

show running-config

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Privileged EXEC

【example】

```
RC702# sh run
!
default-route 192.168.1.1
snmpd
!
ip address 192.168.1.149 255.255.255.0
!
eos mode gfp
```

!

【related commands】

write, erase startup-config, show running-config

4.2.23 write

save present configuration to initial configuration file.

【command】

write

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Global configuration mode

【example】

```
RC702(config)#write
```

```
Writing running-config to flash, please wait...
```

```
...
```

```
Successfully write to flash
```

【related commands】

erase startup-config, show startup-config, show running-config

4.2.24 erase startup-config

erase configuration file: *startup-config*

【command】

erase startup-config

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Global configuration mode

【example】

```
RC702(config)# erase startup-config
```

```
Erase startyp-config successfully.
```

【related commands】

write, show startup-config, show running-config

4.2.25 settime

set system time and date

【command】

settime DATE TIME

【parameter explanation】

DATE: date to set, format is <month/day/year>

TIME: time to set, format is hour: minute: second, for example: 04/07/2003 15:14:51

【default case】

N/A

【command mode】

Privileged EXEC

【example】

```
RC702(config)# set 6/12/2003 12:20:00
```

```
System-time changed to 06/12/2003 12:20:00
```

【related commands】

show clock

4.2.26 show clock

show system time and date

【command】

show clock

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Privileged EXEC

【Application guide】

【example】

```
RC702# show clock
```

```
Now the time is 01/01/1970 00:33:29
```

【related commands】

settime

4.2.27 ping

Test whether connects to network

【command】

ping A.B.C.D [count <1-65535>] [size <1-65535>] [timeout <1-65535>]

【parameter explanation】

A.B.C.D the IP address of the destination host in decimal with dot;

[count <1-65535>] **count:** the ping program will exit automatically after sending certain amount of ICMP echo messages; **<1-65535>:** number of ICMP echo messages will be sent

[size <1-65535>] **size:** size of additional content of the ICMP echo

[timeout <1-255>] the time which the ping program has to wait to decide that the target is not connectable.

【default case】

The count is 4, size is 64 and timeout is 3 by default of this command

【command mode】

User EXEC/Privileged EXEC

【example】

```
RC702#ping <A.B.C.D>
```

(Type CTRL+C break)

```
PING 192.168.1.119: 56 data bytes
```

```
64 bytes from host (192.168.1.119): icmp_seq=0. time=0. ms
```

```
64 bytes from host (192.168.1.119): icmp_seq=1. time=0. ms
64 bytes from host (192.168.1.119): icmp_seq=2. time=0. ms
64 bytes from host (192.168.1.119): icmp_seq=3. time=0. ms
----192.168.1.119 PING Statistics----
4 packets transmitted, 4 packets received, 0% packet loss
round-trip (ms)  min/avg/max = 0/0/0
```

4.2.28 load ftp

Download RC702 AGENT program from certain FTP protocol.

【command】

load ftp A.B.C.D (program|config) FILENAME [username USERNAME] [password PASSWORD]

【parameter explanation】

A.B.C.D: IP address of FTP server

(program|config): type of file to be downloaded.

program—program file to upgrade present system;

config –configuration file to cover *startup-config* file

FILENAME: path and name of target file;

[username USERNAME]: user name of FTP

[password PASSWORD]: user password of FTP

【default case】

Username is *raisecom*, password is 123;

【command mode】

Global configuration mode

【example】

```
RC702(config)# load ftp 192.168.1.119 program RC702
Loading, please wait... file length = 3574927
Writing to flash, please wait...
.....finished
You've successfully download new image file
Now you can type reboot command to reboot system.
```

【related commands】

ping

4.2.29 interface

Enter interface configuration mode

【command】

interface eth 0

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Global configuration mode

【example】

RC702(config)#interface eth 0

RC702(config-if-eth0)#

4.2.30 eos

Enter EOS configuration mode

【command】

eos

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Global configuration mode

【example】

RC702(config)#eos

RC702(config-eos)#

4.3 Network protocol configuration commands

4.3.1 ip arp

Configure a mapping from an IP address to a physical address, use **arp delete** command to erase the mapping.

【command】

ip arp A.B.C.D MACADDRESS

no ip arp A.B.C.D

【parameter explanation】

A.B.C.D: P address of the interface

MACADDRESS: <AA.BB.CC.DD.EE.FF> physical MAC address that the interface has mapped

【default case】

The default ARP table is empty for this command, the address mapping can be gotten through the dynamic ARP protocol

【command mode】

Global configuration mode

【example】

```
RC702(config)# ip arp 192.168.1.119 00:50:8d:46:fb:3
```

【related commands】

show arp, ip arp pendtime, ip arp timeout

4.3.2 ip arp pendtime

Pendtime of arp package

【command】

ip arp pendtime <1-65535>

【parameter explanation】

<1-65535>: range of pendtime value, unit is second.

【default case】

30s

【command mode】

Global configuration mode

【example】

RC702(config)# ip arp pendtime 1000

4.3.3 ip arp timeout

ARP timeout

【command】

ip arp timeout <0-14400>

【parameter explanation】

<0-14400>: range of timeout value, unit is second.

【default case】

180s

【command mode】

Global configuration mode

【example】

RC702(config)# arp timeout 120

4.3.4 snmpd

enable SNMP, use **no** command to disable.

【command】

snmpd

no snmpd

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Global configuration mode

【example】

RC702(config)# snmpd

Successfully changed snmp agent service to up.

4.3.5 show arp

show present arp table

【command】

show arp

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Privileged EXEC

【example】

```
RC702# show arp
```

```
LINK LEVEL ARP TABLE
```

<i>destination</i>	<i>gateway</i>	<i>flags</i>	<i>Refcnt</i>	<i>Use</i>	<i>Interface</i>
192.168.1.119	00:50:8d:46:fb:3	405	1	5	motfec0
192.168.1.127	00:00:39:bb:db:84	405	0	3	motfec0

【related commands】

ip arp

4.3.6 snmp community

Set community table of SNMP and privilege (read/write), use **no** command to delete.

【command】

snmp community COMMUNITYNAME <ro|rw>

no snmp community COMMUNITYNAME

【parameter explanation】

COMMUNITYNAME: community name similar as password to access MIB variables.

<ro|rw>: ro means read only and rw means both read and write.

【default case】

Default name is : public, private

Privilege of public is ro, and private is rw

There 10 community names at most.

【command mode】

Global configuration mode

【example】

RC702(config)# snmp comm raisecom rw

Set snmp community name successfully

【related commands】

show snmp community

4.3.7 show snmp community

Show SNMP community name table

【command】

show snmp community

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Privileged EXEC

【example】

RC702# sh snmp comm

<i>ID</i>	<i>COMMUNITYNAME</i>	<i>RIGHT</i>

<i>1</i>	<i>public</i>	<i>ro</i>
<i>2</i>	<i>private</i>	<i>rw</i>

1 public ro

2 private rw

【related commands】

snmp community

4.3.8 snmp trap-server

Configure SNMP trap server, use no command to delete.

【command】

snmp trap-server A.B.C.D [<1-65535>]

no snmp trap-server A.B.C.D

【parameter explanation】

A.B.C.D: IP address of trap server host

[<1-65535>] the trap receiving interface of the host

【default case】

Default interface number is 162.

【command mode】

Global configuration mode

【example】

RC702(config)# snmp trap-server 192.168.1.119

【related commands】

show snmp trap-server

4.3.9 show snmp trap-server

show SNMP trap server information.

【command】

show snmp trap-server

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Privileged EXEC

【example】

RC702# show snmp trap

Trap server:

<i>ADDRESS</i>	<i>PORT STATUS</i>
----------------	--------------------

192.168.1.119 162 valid

【related commands】

snmp trap-server

4.3.10 default-route

Set default routing, use **no** command to delete.

【command】

default-route A.B.C.D

no default-route A.B.C.D

【parameter explanation】

A.B.C.D: default gateway IP address

【default case】

N/A

【command mode】

Global configuration mode

【example】

```
RC702(config)# default-route 192.168.1.1
```

```
Successfully set default-route to 192.168.1.1
```

【related commands】

show route, ping

4.3.11 show route

show route information

【command】

show route

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Privileged EXEC

【Application guide】

【example】

RC702# sho route

ROUTE NET TABLE

<i>destination</i>	<i>gateway</i>	<i>flags</i>	<i>Refcnt</i>	<i>Use</i>	<i>Interface</i>
<i>0.0.0.0</i>	<i>192.168.1.1</i>	<i>3</i>	<i>0</i>	<i>0</i>	<i>moffec0</i>
<i>192.168.1.0</i>	<i>192.168.1.145</i>	<i>101</i>	<i>0</i>	<i>0</i>	<i>moffec0</i>

ROUTE HOST TABLE

<i>destination</i>	<i>gateway</i>	<i>flags</i>	<i>Refcnt</i>	<i>Use</i>	<i>Interface</i>
<i>127.0.0.1</i>	<i>127.0.0.1</i>	<i>5</i>	<i>1</i>	<i>0</i>	<i>lo0</i>

【related commands】

default-route

4.3.12 show ip statistics

show IP statistics information

【command】

show ip statistics

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Privileged EXEC

【example】

RC702# Terminal line 30

【related commands】

show tcp statistics, show tcp table

4.3.13 show tcp table

show TCP and UDP information

【command】

show ip tcp table

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Privileged EXEC

【example】

RC702# show tcp table

Active Internet connections (including servers)

<i>PCB</i>	<i>Proto</i>	<i>Recv-Q</i>	<i>Send-Q</i>	<i>Local Address</i>	<i>Foreign Address</i>
<i>fc2714</i>	<i>TCP</i>	<i>0</i>	<i>0</i>	<i>0.0.0.0.23</i>	<i>0.0.0.0.0</i>

【related commands】

show ip statistics, show tcp statistics

4.3.14 show tcp statistics

show TCP statistics information

【command】

show tcp statistics

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Privileged EXEC

【example】

```
RC702# show ip tcp statistics
    Tcp Router Algorithm: 4
    Tcp Router Minimum : 0
    Tcp Router Maximum: 0
    Tcp Maximum Connections:128
    Tcp Active Opens: 1278
    Tcp Passive Opens: (null)
    Tcp Attemp Fails: (null)
    Tcp Established Resets: (null)
    Tcp Current Established :(null)
    Tcp In Segments: (null)
    Tcp Out Segments: 1276
    Tcp Retrans Segments: (null)
```

【related commands】

show ip statistics, show tcp table

4.3.15 show snmp trap-server

show SNMP trap server informaiton

【command】

show snmp trap-server

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Privileged EXEC

【example】

```
RC702#show snmp trap-server
Trap server:
```

ADDRESS PORT STATUS

192.168.1.119 162 valid

【related commands】

snmp trap-server

4.4 Interface configuration commands

4.4.1 ip address

configure IP address of interface

【command】

ip address A.B.C.D [A.B.C.D]

【parameter explanation】

A.B.C.D: interface IP address

[A.B.C.D]

【default case】

N/A

【command mode】

Interface configuration mode

【example】

```
RC702(config-if-eth0)# ip address 192.168.1.147 255.255.255.0
```

```
Successfully set ip address
```

【related commands】

show interface

4.4.2 mtu

Set MTU value, use **no** command to restore default value.

【command】

mtu <64-1518>

no mtu

【parameter explanation】

<64-1518>: value range of MTU that Ethernet interface can handle.

【default case】

1500

【command mode】

Interface configuration mode

【related commands】

show interface

4.4.3 show interface

show Ethernet interface status.

【command】

show interface

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Privileged EXEC

【example】

```
RC702# show interface
```

```
motfec (unit number 0):
```

```
Flags: (0x8063) UP BROADCAST MULTICAST ARP RUNNING
```

```
Type: ETHERNET_CSMACD
```

```
Internet address: 192.168.1.145
```

```
Broadcast address: 192.168.1.255
```

```
Netmask 0xfffff00 Subnetmask 0xfffff00
```

```
Ethernet address is 08:00:3e:03:02:11
```

```
Metric is 0
```

```
Maximum Transfer Unit size is 1500
```

```
0 octets received
```

```
0 octets sent
```

4150 packets received

2 packets sent

0 unicast packets received

0 unicast packets sent

4150 non-unicast packets received

2 non-unicast packets sent

0 input discards

0 input unknown protocols

83 input errors

0 output errors

0 collisions; 0 dropped

4.5 EOS configuration commands

4.5.1 eos mode

Set the encapsulation mode of EOS

【command】

eos mode (gfp|laps)

【parameter explanation】

(gfp|laps): encapsulation mode of EOS

gfp: Generic Framing Procedure

laps: Link Access Procedure – SDH

【default case】

Default case of encapsulation is laps

【command mode】

EOS configuration mode

【example】

RC702(config-eos)# eos mode gfp

【related commands】

show eos status, eos type, eos tx-scramble-statue

4.5.2 eos type

type of EOS interface

【command】

eos type (sonet|sdh)

【parameter explanation】

(sonet|sdh): type of EOS interface

sdh: EOS device operates in SDH mode

sonet: EOS device operates in SONET mode

【default case】

Default type is SDN

【command mode】

EOS configuration mode

【example】

RC702(config-eos)# eos type SDH

【related commands】

show eos status, eos mode, eos tx-scramble-statue

4.5.3 eos tx-scramble-statue

change system scramble status

【command】

eos tx-scramble-statue <enable|disable>

【parameter explanation】

<enable|disable>: enable—enable transmitting direction scramble; disable—disable

transmitting direction scramble

【default case】

Default scramble status is disable

【command mode】

EOS configuration mode

【example】

RC702(config-eos)# eos tx-scramble-statue enable

【related commands】

show eos status, eos type, eos type

4.5.4 show eos counter

Show mistake statistics information of EOS

【command】

show eos counter

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Privileged EXEC

【example】

RC702(config-eos)# show eos counter

The number of Coding Violations:

SDH Section: 0

SDH Line: 0

SDH Far End Line: 0

SDH Path: 0

SDH Far End Path: 0

4.5.5 show eos status

Show configuration information of EOS

【command】

show eos status

【parameter explanation】

N/A

【default case】

N/A

【command mode】 Privileged EXEC

【example】

```
RC702(config-eos)# show eos status
```

```
Eos Mode: laps
```

```
SDH Medium Type: sdh
```

```
Tx-scramble-status: disable
```

【related commands】

eos mode, eos type, eos tx-scramble-status

4.6 Log configuration commands

Log is used to record information of user login and traps transmission.

4.6.1 log on

Enable log

【command】

log on

【parameter explanation】

N/A

【default case】

Enable log

【command mode】

Global configuration mode

【example】

```
RC702(config)# log on
```

【related commands】

log off, log clear, show log

4.6.2 log off

Disable log.

【command】

log off

【parameter explanation】

N/A

【default case】

Disable log

【command mode】

Global configuration mode

【example】*RC702(config)# log off***【related commands】****log on, log clear, show log****4.6.3 log clean**

clear log.

【command】

log clean

【parameter explanation】

N/A

【default case】

N/A

【command mode】

Global configuration mode

【example】*RC702 (config)# log clean***【related commands】****log off, log on, show log****4.6.4 show log**

show log information

【command】**show log****【parameter explanation】**

N/A

【default case】

N/A

【command mode】

Privileged EXEC

【example】*RC702# sh log**Login user:*

<i>DATE</i>	<i>TIME</i>	<i>USER</i>	<i>MODE</i>	<i>ADDRESS</i>
<i>ACTION</i>	<i>LEVEL</i>			

<i>01/01/1970</i>	<i>00:45:37</i>	<i>eos</i>	<i>console</i>	<i>null</i>	<i>login</i>
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<i>01/01/1970</i>	<i>00:43:05</i>	<i>eos</i>	<i>console</i>	<i>null</i>	<i>timeout</i>
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<i>01/01/1970</i>	<i>00:01:03</i>	<i>eos</i>	<i>console</i>	<i>null</i>	<i>login</i>
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*Sended trap:**01/01/1970 00:00:00 Send cold start trap.***【related commands】****log off, log clear, log on**

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