Chapter 1 AT Commands Overview

AT commands are sets of commands used for communication with the NePort/NeBoard module.
AT commands are comprised of assemblies of ASCII characters which start with the "AT!" prefix. The AT prefix is derived from the word Attention, which asks the modem to pay attention to the current request (command).
AT commands are used to configure the NePort/NeBoard module, such as:

- Basic setting: device name, local time, time server
- Serial port setting: baud and data packing control
- DTU setting: connect mode and protocol
- DSC setting: server IP and port

1.1 AT Command Syntax

The "AT" or "at" prefix must be set at the beginning of each command line. To terminate a command line enter <CR>. Commands are usually followed by a response that includes "<CR><LF><response><CR><LF>". Throughout this document, only the responses are presented, <CR><LF> are omitted intentionally
Types of AT commands and responses are listed below

AT command type	Syntax	Function
Test command	AT! COMMAND=?	The device returns the list of parameters and value ranges set with the corresponding Write command or by internal processes.
Read command	AT! COMMAND?	This command returns the currently set value of the parameter or parameters.
Write command	AT! COMMAND =<...>	This command sets user-definable parameter values.
Execution command	AT! COMMAND	The execution command reads non-variable parameters determined by internal processes in the device.

1.2 Superscript notation for parameters and values

Parameter type	Meaning
<param>$^{(num)}$	Parameter value must be numeric type
<param>$^{(str)}$	Parameter value must be string type, can contain any combination of characters other than <, >,

1.3 Using Parameters

- Optional parameters are enclosed in square brackets. If optional parameters are omitted, the current settings are used until you change them.
- Optional parameters or sub-parameters can be omitted unless they are followed by other parameters. If you want to omit a parameter in the middle of a string it must be replaced by a comma.
- When the parameter is a character string, e.g. <text> or <number>, the string must been closed in quotation marks, e.g. "Charlie Brown" or "+49030NePort/NeChipx". Symbols in quotation marks

will be recognized as strings.

• All spaces will be ignored when using strings without quotation marks.

• It is possible to omit the leading zeros of strings which represent numbers.

Error Code of Command

ID	Description
0	No error
1	Command usage error
2	Unknown error
3	Not enough memory
4	Syntax error
5	Parameter value is out of range
100	File access error(conflict)
101	Sequence is out of order
102	End of file
103	Command execute error
104	There is an object in the position(index)
105	FTP system error
106	FTP command error
107	Timeout

1.4 How to enter the AT command configuration mode

Module provides two methods:

1. Module is powered on or reset, about 500 ms after waiting for the module to a serial port to send "+ + +", then waiting for 1 seconds after will receive "enter AT! command mode! OK ". If not match in 1 seconds or receive other data will be directly into the normal working mode.
2. To establish a TCP connection to port 5001 will receive IP, MAC and "enter AT! command mode! OK "; Or set the TCP command channel to the client, to establish a connection to the remote host, the remote host receives IP, MAC and “enter the AT! The command mode! OK".

Notes

Some version does not support at the same time.

Contents

Chapter 2 System operation

2.1 AT!EXIT Exit AT command line interface

Syntax

Execute Command

AT!EXIT

Response(s)

None

Parameter Description

None.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *Support IO switch work/command mode version of this command is invalid.*
3. *RS232/485/422 mode and the baud rate after modification, do not need to perform*

storage and restart action, can be directly executed after AT!EXIT takes effect immediately, but at the next reboot the system after the work will be restored to its original parameters.

4. *If through the TCP channel using the AT command, the AT!EXIT cannot be used*

2.2 AT!APP Apply channel

Syntax

Execute Command

Format: AT!APP=<Channel>,<Reset Channel>

Example1: AT!APP=0,1 //

Example2: AT!APP=1,1 //

[…]

Response(s)

OK

ERROR

Parameter Description

<channel>(num)

Serial port channel Number, can't be omitted.

<reset channel>(num)

0 reserved

1 apply

.

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *Only apply to some dynamic configuration parameters do not need to restart the direct effect, such as the remote host and the remote port, local port, the custom ID, etc.*
3. *Even if the parameters have effect, but is not stored to the FLASH, also at the next reboot the system after the work will be restored to its original parameters.*

2.3 AT!LD Load factory default value

Syntax

Execute Command

AT!LD

Response(s)

OK

ERROR

Parameter Description

None.

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *Because do not make sure the module currently used baud rate will not be able to use this command, you can keep by default IO pin about 5 s of the low level to perform the load the factory default values, restore the baud rate to 9600bps.*

3. *"AT!LD=1" It means to delete customized default parameters, using the manufacturer's default parameters.*

2.4 AT!S Save parameters

Syntax

Execute Command

AT!S

Response(s)

OK

ERROR

Parameter Description

None.

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *Execute the command AT!S store to FLASH, If there are some of the parameters used by hope to restart the system after modification, please execute the AT! S command.*
3. *"AT!S=1": Save the current parameters to customized parameters area and converted to the current default parameters.*

2.5 AT!R Restart system

Syntax

Execute Command

AT!R

Response(s)

OK

ERROR

Parameter Description

None.

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *For part of the command configuration needs to be saved and will only take effect after restart.*
3. *After being all need configuration command configuration, the last of execution AT! S after execution AT! R command.*

2.6 AT!V Show all commands

Syntax

Execute Command

AT!V

Response(s)

[…] // Print all supported the command line
OK

Parameter Description

None.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *Used for debugging stage to view all commands supported by the current module*

2.7 AT!SL Serial login

Syntax

Execute Command

AT!SL

Response(s)

OK
ERROR

Parameter Description

None.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *The model in the form of a menu form to print all the options available, it is mainly used for human-computer interaction interface, for example: Hyper Terminal*
3. *This command is not supported in low-lost version.*

Chapter 3 Basic setting

3.1 AT!BDN Set device name

Syntax

Test Command

AT!BDN=?

Response(s)

AT!BDN=?
AT!BDN=Server name
OK

Write Command

Format: AT!BDN=<name>
Example: AT!BDN="NePort-DL"

Response(s)

AT!BDN="NePort-DL"
OK

Read Command

AT!BDN?

Response(s)

AT!BDN?

AT!BDN="NePort-DL"

OK

Parameter Description

<name>(str)

Device name. The maximum string length is limited to 13 characters.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *When AT!CTSM of "Send device name" is set to 1, each time after the connection is established in the first IP packet to insert "device name" used to identify status；*
3. *Execute restore the factory function can not restore the original value*

3.2 AT!BC Set console

Syntax

Test Command

AT!BC=?

Response(s)

AT!BC=?

AT!BC=Web Console, Telnet Console

OK

Write Command

Format: AT!BC=<web console>,<telnet console>

Example: AT!BC=1,1

Response(s)

AT!BC=1,1

OK

Read Command

AT!BC?

Response(s)

AT!BC?

AT!BC=1,1

OK

Parameter Description

<web console>(num)

0 disable web console

1 enable web console (default)

<telnet console>(num)

0 disable telnet console

1 enable telnet console (default)

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

3.3 AT!BTS Local time

Syntax

Test Command

AT!BTS=?

Response(s)

AT!BTS=?

AT!BTS=Time Zone, Local Time, Timer server

OK

Write Command

Format: AT!BTS=<time zone>,<year>,<month>,<day>,<hour>,<min>,<sec>,<time server>

Example: AT!BTS=1,"2008-08-08 20:09:17","time.nist.gov"

Response(s)

AT!BTS=1,"2008-08-08 20:09:17","time.nist.gov"

OK

Read Command

AT!BTS?

Response(s)

Format: AT!BTS=<time zone>,<year>,<month>,<day>,<hour>,<min>,<sec>,<time server>

Example:

AT!BTS?

AT!BTS=1,"2008-08-08 20:15:08","time.nist.gov"

OK

Parameter Description

<time zone>(num)

0 (GMT+08:00)Beijing, Chongqing, Hong Kong, Urumqi

1 (GMT)Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London

2 (GMT-05:00)Eastern Time (US & Canada)

<year>(num)

2000-65535 year of local time

<month>(num)

1-12 month of local time

<day>(num)

1-31 day of local time

<hour>(num)

0-23 hour of local time

<min>(num)

0-59 minute of local time

<sec>(num)

0-59 second of local time

<time server>(str)

Domain name of time server. The maximum string length is limited to 30 characters.

Notes

1. Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”

3.4 AT!BNT NTP time

Syntax

Test Command

AT!BNT=?

Response(s)

AT!BNT=Ntp Time

OK

Write Command

(reserved)

Read Command

AT!BNT?

Response(s)

Format: AT!BNT=<year>,<month>,<day>,<hour>,<min>,<sec>

Example(The network time synchronization is successful):

AT!BNT?

AT!BNT="2013-05-13 15:32:12"

OK

Example(The network time synchronization is failure):

AT!BNT?

AT!BNT="0000-00-00 00:00:00"

OK

Parameter Description

<year>(num)

2000-65535 year of local time

<month>(num)

1-12 month of local time

<day>(num)

1-31 day of local time

<hour>(num)

0-23 hour of local time

<min>(num)

0-59 minute of local time

<sec>(num)

0-59 second of local time

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *If successful, will synchronize the local time.*
3. *If failed, The system will keep the current local time, please check the configuration of network gateway and the AT!BTS command.*

Chapter 4 Network setting

4.1 AT!IC IP configuration

Syntax

Test Command

AT!IC=?

Response(s)

AT!ic=?

AT!IC=Network settings, Ip address, Subnet mask, Default gateway, Preferred DNS Server, Alternate DNS Server

OK

Write Command

Format: AT!IC=<auto>,<ip address>,<mask>,<gateway>,<dns0>,<dns1>

Example:

AT!IC=0,"192.168.0.156","255.255.255.0","192.168.0.3","192.168.0.1","192.168.0.3"

Response(s)

AT!IC=0,"192.168.0.156","255.255.255.0","192.168.0.3","192.168.0.1","192.168.0.3"

OK

Read Command

AT!IC?

Response(s)

AT!IC?

AT!IC=0,"192.168.0.156","255.255.255.0","192.168.0.3","192.168.0.1","192.168.0.3"

OK

Parameter Description

<auto>$^{(num)}$

Obtain ip address method of device.

0 manually (default)

1 automatically

<IP address>$^{(str)}$

Ipv4 IP address format string(dd.dd.dd.dd) of device.

<mask>$^{(str)}$

Network mask address of device in IPv4 IP address format.

<gateway>$^{(str)}$

Network gateway IP address of device in IPv4 IP address format.

<DNS0>$^{(str)}$

Preferred DNS server IP address of device in IPv4 IP address format.

<DNS1>(str)

Alternate DNS server IP address of device in IPv4 IP address format.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *When AT!CTSM of "Send device Ip" or "Send device Mac" is set to 1, each time after the connection is established in the first IP packet to insert "Send device Ip" or "Send device Mac" used to identify status；*
3. *Once MAC address has been modified, Execute restore the factory function can not restore the original value.*

4.2 AT!AIC Automatically IP configuration

Syntax

Test Command

AT!AIC=?

Response(s)

AT!AIC=?

AT!AIC=AutoIP, BOOTP, DHCP, DHCP Host Name

OK

Write Command

Format: AT!AIC=[<AUTO IP>,<BOOTP>,<DHCP>,[<DHCP HOST>]]

Example1: AT!AIC=1,1,1

Example2: AT!AIC=1,1,1,"host name"

Response(s) example1

AT!AIC=1,1,1," "

OK

Response(s) example2

AT!AIC=1,1,1,"host name"

OK

Read Command

AT!AIC?

Response(s) example1

AT!AIC?

AT!AIC=1,1,1,""

OK

Response(s) example2

AT!AIC?

AT!AIC=1,1,1,"host name"

OK

Parameter Description

<AUTOIP>(num)

Use AUTOIP protocol to obtain IP address of device.

0 disable

1 enable (default)

<BOOTP>(num)

Use BOOTP protocol to obtain IP address of device.

0 disable

1 enable (default)

<DHCP>(num)

Use DHCP protocol to obtain IP address of device.

0 disable

1 enable (default)

<DHCP HOST>(str)

Name of DHCP server used when obtain IP address by DHCP protocol to distinguish DHCP servers. The maximum string length is limited to 30 characters.

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *The priority of 3 protocol use to obtain IP address automatically is DHCP > BOOTP > AUTOIP.*
3. *AT!AIC command is usually no need configuration, please keep the default configuration*

4.3 AT!EC Ethernet configuration

Syntax

Test Command

AT!EC=?

Response(s)

AT!EC=?

AT!EC=speed/duplex, speed, duplex, Modify Mac Address

OK

Write Command

Format: AT!EC=[<Auto Negotiate>,[<Speed>,<Duplex>],<MAC Address>]

Example1: AT!EC=1 *//Enable the Auto-Negotiate, don't care about the back of the value*

Example2: AT!EC=0,0,1 *//Specified work in 10M full duplex mode*

Example3: AT!EC=1,1,1,"00.f0.03.04.01.23" *//Configure the MAC address.*

Response(s)

AT!EC=1,1,1,"00.f0.03.04.01.23"

OK

Read Command

AT!EC?

Response(s)

AT!EC?

AT!EC=1,1,1,"00.f0.03.04.01.23"

OK

Parameter Description

<Auto Negotiate>(num)

Configure Net-card method.

0 manually
1 automatically (default)

<Speed>(num)

Net-card speed.

0 10Mbps
1 100Mbps

<Duplex>(num)

Net-card duplex mode.

0 full mode
1 half mode

<MAC Address>(str)

Net-card MAC Address (xx.xx.xx.xx.xx.xx)

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *When you enable automatic negotiation options after <Speed> and <Duplex> is invalid*

Chapter 5 Server setting

5.1 AT!SC Server configuration

Syntax

Test Command

AT!SC=?

Response(s)

AT!SC=?
AT!SC=ARP Cache Timeout, CPU Performance Mode, MTU Size
OK

Read Command

AT!SC?

Response(s)

Format: AT!SC=<arp timeout>,<cpu mode>,<mtu size>
Example:
AT!SC?
AT!SC=255,1,1024
OK

Write Command

Format: AT!SC=[<arp timeout>,<cpu mode>]
Example:
AT!SC=255,1

Response(s)

AT!SC=255,1
OK

Parameter Description

<arp timeout>(num)

60-255 Timeout time of arp cache in seconds.

<cpu mode>(num)

0 high mode, will cost more power

1 regular mode, use less power as possible (default))

<mtu size>(num)

128~1500 Size of MTU of device, can not be modified.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *AT!SC command is usually no need configuration, please keep the default configuration*

5.2 AT!HP HTTP and TELNET server port configuration

Syntax

Test Command

AT!HP=?

Response(s)

AT!HP=?

AT!HP=HTTP Server Port, Telnet Server Port

OK

Read Command

AT!HP?

Response(s)

AT!HP?

AT!HP=80,23

OK

Write Command

Format: AT!HP=<http port>,<telnet port>

Example: AT!HP=8080,23

Response(s)

AT!HP=8080

OK

Parameter Description

<http port>(num)

1 ~ 65535 listening port number used by http server. (default: 80)

<telnet port>(num)

1 ~ 65535 listening port number used by telnet server. (default: 23)

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *Reassigned port number can not be conflict with other applications, otherwise it will lead to failure.*
3. *Has been modified in the WEB browser address bar the input formats:*

http://192.168.0.156:8080

4. *This command is not supported in low-lost version.*

5.3 AT!CTA Command channel

Syntax

Test Command

AT!CTA=?

Response(s)

AT!CTA=?

AT!CTA=Cmd Tcp Console, Work as, Local Port, Remote Port, Remote Host

OK

Write Command

Format: AT!CTA=<Enable Console>,<Work as>,<Local Port>,<Remote Port>, <Remote Host>

Example: AT!CTA=1,0,5001,9080,"www.conextop.com"

Response(s)

AT!CTA=1,0,5001,9080,"www.conextop.com"

OK

Read Command

AT!CTA?

Response(s)

AT!CTA?

AT!CTA=1,0,5001,9080,"www.conextop.com"

OK

Parameter Description

<Enable Console> (num)

0 disable (default)

1 enable

< Work as >(num)

0 as a TCP client mode, do not accept incoming connection.

1 as a TCP server mode, listen on local port.

2 Server and client mode is support at the same time.

<Local Port>(num)

TCP connection local port, range from 10000 to 65535.

<Remote Port>(num)

TCP connection remote port, range from 1 to 65535.

<Remote Host>(str)

TCP connection remote host, name or IP address.

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *To build a TCP channel to carry the AT command, for remote dynamic configuration module*
3. *This command is not supported in low-lost version.*

5.4 AT!AUD Auto Update

Syntax

Test Command

AT!AUD=?

Response(s)

AT!AUD=?

AT!AUD=Update En, Constraint

OK

Write Command

Format: AT!AUD=<Enable update>,<constraint set>

Example: AT!AUD=1,"GE_INV_33201"

Response(s)

AT!AUD=1,"GE_INV_33201"

OK

Read Command

AT!AUD?

Response(s)

AT!AUD?

AT!AUD=1,"GE_INV_33201"

OK

Parameter Description

<Enable update> (num)

0 disable (default)

1 enable

< constraint set >(str)

The maximum length of 31 characters, Used to constrain the file name is automatically upgraded, the upgrade package according to the first set of constraints on the check the server is available, the download and then the upgrade through a set of constraints.

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *This command is not supported in low-lost version.*

5.5 AT!CLM Set Cloud Console

Syntax

Test Command

AT!CLM=?

Response(s)

AT!CLM=?

AT!CLM=Cloud Console, Remote Host, Remote Port

OK

Write Command

Format: AT!CLM=<Enable cloud>,<remote port>,<remote host>

Example: AT!CLM=1,8066, "www.conextop.com"

Response(s)

AT!CLM=1,8066, ”www.conextop.com”

OK

Read Command

AT!CLM?

Response(s)

AT!CLM?

AT!CLM=1,8066, ”www.conextop.com”

OK

Parameter Description

< Enable cloud > (num)

0 disable (default)

1 enable

<remote port>(num)

1 ~ 65535 Remote Drive Management Services port.

<Remote Host>(str)

Remote drive management services host, domain name or IP address.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *Users can create a private cloud management service center, but when you can not find the specified remote host will be to sign on the manufacturer's server to the user for further processing.*
3. *This command is not supported in low-lost version.*

Chapter 6 Serial port setting

6.1 AT!SP Serial port setting

Syntax

Test Command

AT!SP=?

Response(s)

AT!SP=?

AT!SP=Channel(0),Enable Serial Port, Baud rate, Data bits, Stop bits, Parity, Flow control, FIFO

OK

Write Command

Format: AT!SP=<channel>,[<enable>,
,<db>,<sb>,<parity>,<fc>,<fifo>]

Example1: AT!SP=0,1,9600,3,0,0,0,1

Example2: AT!SP=0,1,10,3,0,0,0,1

Response(s) Example1

AT!SP=0,1,9600,3,0,0,0,1 //Set to 9600bps, For the dynamic configuration version

OK

Response(s) Example2

AT!SP=0,1,10,3,0,0,0,1 //Set to 9600bps

OK

Read Command

AT!SP?

Response(s)

Format: AT!SP=<channel>,<enable>,
,<db>,<sb>,<parity>,<fc>,<fifo>

Example1:

AT!SP?

AT!SP=0,1,9600,3,0,0,0,1 // For the dynamic configuration version

OK

Example2:

AT!SP?

AT!SP=0,1,10,3,0,0,0,1 // Has been set up to 9600

OK

Parameter Description

<channel>(num)

Serial port channel Number, can't be omitted.

<enable>(num)

0 disable serial port

1 enable serial port

(num)

Serial port baud rate.

0 110bps

1 134bps

2 150bps

3 300bps

4 600bps

5 1200bps

6 1800bps

7 2400bps

8 4800bps

9 7200bps

10 9600bps (default)

11 14400bps

12 19200bps

13 38400bps

14 57600bps

15 115200bps

16 230400bps

17 460800bps

18 921600bps

<db>(num)

Data bit.

0 data bits is 5
1 data bits is 6
2 data bits is 7
3 data bits is 8 (default)

<sb>(num)

Stop bits.

0 stop bits is 1 (default)
1 stop bits is 1.5
2 stop bits is 2

<parity>(num)

0 no parity (default)
1 odd parity
2 even parity
3 mark parity
4 space parity

<fc>(num)

Flow control.

0 no flow control (default)
1 software flow control
2 hardware flow control

<fifo>(num)

Serial port hardware receive buffer size

0 14bytes
1 8bytes (default)
2 4bytes

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *The baud rate supported is different between channels. If the serial port protocol is RS422, the flow control mode can not be set as hardware flow control. If the serial port protocol is RS485, the flow control mode must be set as no flow control. Whether a serial port supports hardware flow control mode is dependent on the hardware.*
3. *Baud rate after this option in the configuration take effect immediately.*

6.2 AT!SPP Serial port protocol setting

Syntax

Test Command

AT!SPP=?

Response(s)

AT!SPP=?
AT!SPP=Channel(0),Protocol
OK

Read Command

AT!SPP?

Response(s)

Format: AT!SPP=<channel>,<protocol>

Example:

AT!SPP?

AT!SPP=0,0

OK

Write Command

Format: AT!SP=<channel>,[<protocol>]

Example: AT!SPP=0,0 //Set to RS232 Mode

Response(s)

AT!SPP=0,0

OK

Parameter Description

<channel>(num)

Serial port channel Number, can't be omitted.

<protocol>(num)

0 RS232

1 RS422

2 RS485

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *The protocol supported is different between channels.*
3. *If new protocol is selected, the flow control way will be set as no flow control automatically.*
4. *Protocol parameters after this option in the configuration take effect immediately.*
5. *Execute restore the factory function can not restore the original value.*

6.3 AT!SPPL Serial port packing manage

Syntax

Test Command

AT!SPPL=?

Response(s)

AT!SPPL=?

AT!SPPL=Channel(0),Uart Packet Len,Idle Gap Time,Merge length,Net Idle Gap Time,Latch

OK

Write Command

Format:

AT!SPPL=<channel>,<packing length>,<idle gap time>,<merge length>, <net idle gap time>, <latch time>

Example: AT!SPPL=0,512,20,1,5,0

Response(s)

AT!SPPL?

AT!SPPL=0,512,20,1,5,0

OK

Read Command

AT!SPPL?

Response(s)

Format:

AT!SPPL=<channel>,<packing length>,<idle gap time>,<merge length>,<net idle gap time>, <latch time>

Example:

AT!SPPL?

AT!SPPL=0,512,20,1,5,0

OK

Parameter Description

<channel>(num)

Serial port channel Number, can't be omitted.

< packing length>(num)

If the current serial port receives the data length is matching configuration, forced to send data to the network, usually keep default value.

1 ~ 1500 byte

< idle gap time>(num)

Set up a serial port to network maximum timeout time for inactivity, According to the actual need to adjust the best value, usually set to 10 ~ 30ms.

1 ~ 255ms

< merge length>(num)

Sometimes the network packet is broken package, waiting to receive some IP packet data after total length matching configuration values, start the data from the serial port output.

1 ~ 1500 byte

<net idle gap time>(num)

Set up a network to serial port maximum timeout time for inactivity, According to the actual need to adjust the best value, usually set to 1~5ms.

1 ~ 255ms

< latch time>(num)

When multiple connections established need to access the serial port, serial port within the latch time receive data back to the same peer.

0 ~ 255ms

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *Inappropriate Settings may cause communication effect is not ideal.*
3. *This command is not supported in low-lost version.*

6.4 AT!SPPC Serial port packing control

Syntax

Test Command

AT!SPPC=?

Response(s)

AT!SPPC=?

AT!SPPC=Channel(0),Enable Match Packing, Match 2 Byte Sequence, Send Frame Only, Match Byte 1, Match Byte 2

OK

Write Command

Format: AT!SPPC=<channel>,<packing control>,<match bytes control>,<send frame only>, <match byte1>,<match byte2>

Example: AT!SPPC=0,0,0,0,31,32

Response(s)

AT!SPPC=0,0,0,0,31,32

OK

Read Command

AT!SPPC?

Response(s)

Format:

AT!SPPC=<channel>,<packing control>,<match bytes control>,<send frame only>, <match byte1>,<match byte2>

Example:

AT!SPPC?

AT!SPPC=0,0,0,0,31,32

OK

Parameter Description

<channel>(num)

Serial port channel Number, can't be omitted.

<packing control>(num)

0 disable packing (default)

1 enable packing

<match bytes control>(num)

0 match byte 1 for packing

1 match 2 bytes for packing

<send frame only>(num)

0 disable

1 enable

<match byte 1>(hex num)

0x0-0xFF character in hex format

<match byte 2>(hex num)

0x0-0xFF character in hex format

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *AT!SPPC command is usually no need configuration.*

Chapter 7 Connection

7.1 AT!CPC TCP/UDP mode switch

Syntax

Test Command

AT!CPC=?

Response(s)

AT!CPC=?

AT!CPC=Channel(0),Connection Settings, Data trace

OK

Read Command

AT!CPC?

Response(s)

Format:

AT!CPC=<Channel>,<Mode>

OK

Example

AT!CPC?

AT!CPC=0,1,0

OK

Write Command

Format: AT!CPC=<Channel>,<Mode>,<Data trace>

Example: AT!CPC=0,1,1

Response(s)

AT!CPC=0,1,1

OK

Parameter Description

<Channel>(num)

Serial port channel No, can't be omitted.

<Mode>(num)

0	UDP	
1	TCP	(default)
2	BOTH	(TCP + UDP)

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *TCP + UDP options is not supported in some version.*

7.2 AT!TC TCP configuration

Syntax

Test Command

AT!TC=?

Response(s)

AT!TC=?

AT!TC=Channel(0),Work As, Active connect, Local port, Remote port, Remote host, Start

character, DNS Query Period

OK

Read Command

AT!TC?

Response(s)

Format:

AT!TC=<Channel>,<Accept Incoming>,<Active Connect>,<Local Port>, <Remote Port>, <Remote Host>,<Start Character>,<DNS Query Period>

[...]

OK

Example:

AT!TC?

AT!TC=0,0,0,27001,0,"0.0.0.0",61,1800

OK

Write Command

Format:

AT!TC=<Channel>,<Accept Incoming>,<Active Connect>,<Local Port>,<Remote Port>, <Remote Host>,<Start Character>,<DNS Query Period>

Example1:

AT!TC=0,1,0,27001,0,"0.0.0.0",61 //Set to TCP Server, Ignore the DNS option

Example2:

AT!TC=0,0,3,27001,8010,"192.168.0.31" //Set to TCP Client, auto-start type

Example3:

AT!TC=0,0,3,27001,8010,"www.conextop.com",,1800 //Set to TCP Client, auto-start //type, If you use a DDNS hosts, DNS Query Period values should be reduced.

Example4:

AT!TC=0,0,3,0,8010,"www.conextop.com"

//Used random local port, Recommended in the Internet communication

Response(s)

AT!TC=0,1,0,27001,0,"0.0.0.0",61

OK

Parameter Description

<Channel>(num)

Serial port channel No, can't be omitted.

<Accept Incoming>(num)

0 as a TCP client mode, do not accept incoming connection.

1 as a TCP server mode, listen on local port.

2 Server and client mode is support at the same time.

<Active Connect>(num)

0 do not connect remote host actively.

1 connect remote host actively with any character

2 connect remote host actively with start character

3 connect remote host actively automatically

<Local Port>(num)

TCP connection local port, range from 10000 to 65535.

<Remote Port>(num)

TCP connection remote port, range from 1 to 65535.

<Remote Host>(str)

TCP connection remote host, name or IP address.

<Start Character>(hex num)

The hex value format of start character. (blank display"*")

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *According to the AT! CPC command to decide whether to be activated.*
3. DNS Query Period *options is not supported in some version.*

7.3 AT!DQP DNS query period

Syntax

Test Command

AT!DQP=?

Response(s)

OK

Read Command

AT!DQP?

Response(s)

AT!DQP=<Channel>,<DNS period>

[...]

OK

Write Command

AT!DQP=<Channel>,<DNS period>

Response(s)

OK

ERROR

Parameter Description

<Channel>(num)

Serial port channel No, can't be omitted.

<DNS period>(num)

Check remote host name's IP address periodical time, range from 0S to 65535S.

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *This command is not supported in low-lost version.*

7.4 AT!CTIT TCP inactivity time configuration

Syntax

Test Command

AT!CTIT=?

Response(s)

AT!CTIT=?

AT!CTIT=Channel(0),Inactivity Timeout

OK

Read Command

AT!CTIT?

Response(s)

Format: AT!CTIT=<Channel>,<inactive sec>

Example:

AT!CTIT?

AT!CTIT=0,255

OK

Write Command

Format: AT!CTIT=<Channel>,<inactive sec>

Example1: AT!CTIT=0,200

Example2: AT!CTIT=0,0 // When set 0 always keep connection status

Response(s)

AT!CTIT=0,200

OK

Parameter Description

<Channel>(num)

Serial port channel No, can't be omitted.

<inactive sec>(num)

Seconds of inactivity time of TCP connection. (<255S) 0: keeping TCP connection

Notes

Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"

7.5 AT!CTKA TCP keep alive

Syntax

Test Command

AT!CTKA=?

Response(s)

AT!CTKA=?

AT!CTKA=Channel(0),Keep Alive

OK

Read Command

AT!CTKA?

Response(s)

Format: AT!CTKA=<Channel>,<keepalive sec>

Example:

AT!CTKA?
AT!CTKA=0,10
OK

Write Command

Format: AT!CTKA=<Channel>,<keepalive sec>

Example1: AT!CTKA=0,30

Response(s)

AT!CTKA=0,30
OK

Parameter Description

<Channel>(num)

Serial port channel No, can't be omitted.

<inactive sec>(num)

Seconds of keep alive time of TCP connection. (<255S)

Notes

Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"

7.6 AT!CTSM Send the identity

Syntax

Test Command

AT!CTSM=?

Response(s)

AT!CTSM=?
AT!CTSM=Channel(0),Send device name, Send device Ip, Send device Mac, Send Channel Id
OK

Read Command

AT!CTSM?

Response(s)

Format:

AT!CTSM=<Channel>, <Send device name>, <Send device ip>, <Send device Mac>, <Send Channel id>

Example:

AT!CTSM?
AT!CTSM=0,0,0,0,1
OK

Write Command

Format:

AT!CTSM=<Channel>, <Send device name>, <Send device ip>, <Send device Mac>, <Send Channel id>

Example:

AT!CTSM=0,1,1,1,1

Response(s)

AT!CTSM=0,1,1,1,1
OK

Parameter Description

<Channel>(num)

Serial port channel No, can't be omitted.

<send device name>(num)

0 disable

1 enable

<send device ip>(num)

0 disable

1 enable

<send device mac>(num)

0 disable

1 enable

<send device id>(num)

0 disable

1 enable

Notes

Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"

7.7 AT!CTSI TCP security id

Syntax

Test Command

AT!CTSI=?

Response(s)

AT!CTSI=?
AT!CTSI=Channel(0),Security Timeout (ms),Tcp Security Id
OK

Read Command

AT!CTSI?

Response(s)

Format: AT!CTSI=<Channel>,<timeout ms>,<security id>
Example:
AT!CTSI?
AT!CTSI=0,500,""
OK

Write Command

Format: AT!CTSI=<Channel>,<timeout ms>,<security id>
Example: AT!CTSI=0,500,"1223112123"

Response(s)

AT!CTSI=0,500,"122311212"
OK

Parameter Description

<Channel>(num)

Serial port channel No, can't be omitted.

<timeout ms> (num)

Seconds of inactivity time of TCP connection. (<65535ms)

<timeout ms> (hex)

Hex value. The maximum length is limited to 128 byte.

Notes

Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"

7.8 AT!CTCI Set channel ID

Syntax

Test Command

AT!CTCI=?

Response(s)

AT!CTCI=?

AT!CTCI=Channel(0), Tcp Channel Id

OK

Write Command

Format: AT!CTCI=<Channel>, <Channel ID>

Example: AT!CTCI=0, 23232432323232323232332

Response(s)

AT!CTCI=0, 23232432323232323232332

OK

Read Command

AT!CTCI?

Response(s)

AT!CTCI?

AT!CTCI=0, 23232432323232323232332

OK

Parameter Description

<channel>(num)

Serial port channel Number, can't be omitted.

< Channel ID>(hex)

Hex value. The maximum length is limited to 255 byte.

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *After the connection is established in the first IP package insert ID data sent to the peer.*

7.9 AT!CTCR TCP Connect Response

Syntax

Test Command

AT!CTCR=?

Response(s)

AT!CTCR=?

AT!CTCR=Channel(0),Connect Response

OK

Write Command

Format: AT!CTCR=<Channel>, < Connect Response >

Example: AT!CTCR=0,1

Response(s)

AT!CTCR=0,1

OK

Read Command

AT!CTCR?

Response(s)

AT!CTCR?

AT!CTCR=0,1

OK

Parameter Description

<channel>(num)

Serial port channel Number, can't be omitted.

< Connect Response >(num)

0 disable

1 enable. (default)

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *If you enable this feature, when the TCP connection is established after the RTS output low level, the output high level after disconnection.*

7.10 AT!CTDM TCP disconnected mode

Syntax

Test Command

AT!CTDM=?

Response(s)

AT!CTDM=?

AT!CTDM=Channel(0), CTS EN, Check EOT(Ctr-D), On DSR Drop, Hard Disconnect

OK

Write Command

Format: AT!CTDM=<Channel>,<CTS EN>,<Check EOT>,<DSR Drop>,<Hard Disconnect>

Example: AT!CTDM=0,1

Response(s)

AT!CTDM=0,1

OK

Read Command

AT!CTDM?

Response(s)

AT!CTDM?

AT!CTDM=0,1,0,0,0

OK

Parameter Description

<channel>(num)

Serial port channel Number, can't be omitted.

<CTS EN>(num)

0 disable (default)

1 enable, According to the status of CTS pin to establish or disconnect all the TCP of the current channel.

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *Applicable to active control connection state of the environment according to different conditions, such as tax-controlled machine, POS, etc.*

7.11 AT!CR Serial port remark

Syntax

Test Command

AT!CR=?

Response(s)

AT!CR=?

AT!CR=Channel(0),Channel Remark

OK

Write Command

Format: AT!CR=<Channel>, <Channel Remark>

Example: AT!CR= Collector_BL311

Response(s)

AT!CR=CollectorBL311

OK

Read Command

AT!CR?

Response(s)

AT!CR?

AT!CR=0," CollectorBL311"

OK

Parameter Description

<channel>(num)

Serial port channel Number, can't be omitted.

< Channel Remark >(str)

For a serial port assigned a name. The maximum string length is limited to 10 characters.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *After the name can be used to establish a TCP socket connection is inserted into the first IP packets sent to the peer to identify a serial port (And sending device name used together).*

7.12 AT!CTFIB Flush input buffer of serial port

Syntax

Test Command

AT!CTFIB=?

Response(s)

AT!CTFIB=?

AT!CTFIB=Channel(0),With Active Connect, With Passive Connect, At Time of Disconnect

OK

Read Command

AT!CTFIB?

Response(s)

Format:

AT!CTFIB=<channel>,<fib watc>,<fib wpsv>,<fib atod>

[...]

OK

Example:

AT!CTFIB?

AT!CTFIB=0,0,0,0

OK

Write Command

Format: AT!CTFIB=<channel>,[<fib watc>,<fib wpsv>,<fib atod>]

Example: AT!CTFIB=0,1,1,1

Response(s)

AT!CTFIB=0,1,1,1

OK

Parameter Description

<channel>(num)

Serial port channel Number, can’t be omitted.

<fib watc>(num)

Flush input buffer with active connect

0 disable

1 enable

<fib wpsv>(num)

Flush input buffer with passive connect

0 disable

1 enable

<fib atod>(num)

Flush input buffer at time of disconnect

0 disable

1 enable

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *AT!CTFIB command is usually no need configuration.*
3. *This command is not supported in low-lost version.*

7.13 AT!CTFOB Flush output buffer of serial port

Syntax

Test Command

AT!CTFOB=?

Response(s)

AT!CTFOB=?

AT!CTFOB=Channel(0),With Active Connect, With Passive Connect, At Time of Disconnect

OK

Read Command

AT!CTFOB?

Response(s)

Format:

AT!CTFOB=<channel>,<fob watc>,<fob wpsv>,<fob atod>

[...]

OK

Example:

AT!CTFOB?

AT!CTFOB=0,0,0,0

OK

Write Command

Format: AT!CTFOB=<channel>,[<fib watc>,<fib wpsv>,<fib atod>]

Example: AT!CTFOB=0,1,1,1

Response(s)

AT!CTFOB=0,1,1,1

OK

Parameter Description

<channel>(num)

Serial port channel Number, can’t be omitted.

<fob watc>(num)

Flush output buffer with active connect

0 disable
1 enable

<fob wpsv>(num)

Flush output buffer with passive connect

0 disable
1 enable

<fob atod>(num)

Flush output buffer at time of disconnect

0 disable
1 enable

Notes

1 *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2 *AT!CTFOB command is usually no need configuration.*
3 *This command is not supported in low-lost version.*

7.14 AT!CTUHL TCP connection use host list

Syntax

Test Command

AT!CTUHL=?

Response(s)

AT!CTUHL=?
AT!CTUHL=Channel(0),Use Hostlist
OK

Read Command

AT!CTUHL?

Response(s)

AT!CTUHL?
AT!CTUHL=0,0
OK

Write Command

Format: AT!UHL=<Channel>,<use hostlist>
Example: AT!CTUHL=0,1

Response(s)

AT!CTUHL=0,1
OK

Parameter Description

<Channel>(num)

Serial port channel No, can’t be omitted.

<use hostlist>(num)

0 disable
1 enable

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

7.15 AT! UTH Tracing the source host of UDP packets

Syntax

Test Command

AT!UTH=?

Response(s)

AT!UTH=?

AT!UTH=Channel(0), Udp Tmp Host

OK

Read Command

AT!UTH?

Response(s)

Format:

AT!UTH=<Channel>,<Udp Tmp Host>

Example:

AT!UTH?

AT!UTH=0,1

OK

Write Command

Format: AT!UTH=<Channel>,<Udp Tmp Host>

Example: AT!UTH=0,1

Response(s)

AT!UTH=0,1

OK

Parameter Description

<Channel>(num)

Serial port channel No, can’t be omitted.

< Udp Tmp Host>$^{(num)}$

Allow access to the source host from the UDP packet.

0 disable

1 enable

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *According to the AT! CPC command to decide whether to be activated.*

7.16 AT!UDM UDP data mode configuration

Syntax

Test Command

AT!UDM=?

Response(s)

AT!UDM=Channel(0),Accept incoming, Datagram type, local port
OK

Read Command

AT!UDM?

Response(s)

Format:

AT!UDM=<Channel>,<Accept Incoming>,<Datagram Type>,<local port>
[...]
OK

Example:

AT!UDM?
AT!UDM=0,0,0,27001
OK

Write Command

Format: AT!UDM=<Channel>,<Accept Incoming>,<Datagram Type>,<local port>

Example1: AT!UDM=0,1,0,27001 // Allows the receiving UDP unicast packets

Example2: AT!UDM=0,1,1,27001 // Allows the receiving UDP multicast packets

Response(s)

AT!UDM=0,1,0,27001
OK

Parameter Description

<Channel>(num)

Serial port channel No, can't be omitted.

<Accept Incoming>(num)

Whether accept incoming data.

0 No
1 Yes

<Datagram Type>(num)

UDP datagram type.

0 unicast
1 multicast

<uni-lport>(num)

Local port of unicast mode.

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *According to the AT! CPC command to decide whether to be activated.*

7.17 AT!UMC UDP multicast configuration

Syntax

Test Command

AT!UMC=?

Response(s)

AT!UMC=?

AT!UMC=Channel(0),remote port, remote host, local port

OK

Read Command

AT!UMC?

Response(s)

Format:

AT!UMC=<Channel>, <Remote Port>,<Net Segment>,<Local Port>

[...]

OK

Example:

AT!UMC?

AT!UMC=0,0,"0.0.0.0",27001

OK

Write Command

Format: AT!UMC=<Channel>, <Remote Port>,<Net Segment>,<Local Port>

Example: AT!UMC=0,8010,"224.0.2.31",27001

Response(s)

AT!UMC=0,8010,"224.0.2.31",27001

OK

Parameter Description

<Channel>(num)

Serial port channel No, can't be omitted.

<Remote Port>(num)

Remote port of multicast mode.

<Net Segment>(str)

Remote IP address of multicast mode.

<Local Port>(num)

Local port of multicast mode.

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *According to the AT! CPC and AT!UDM command to decide whether to be activated.*

7.18 AT!UDT UDP device address table

Syntax

Test Command

AT!UDT =?

Response(s)

AT!UDT=?

AT!UDT=Channel(0),Index(

Write Command

Format: AT!UMC=<Channel>,<index>,<Begin address>,<End address>,<Remote Port>

Example: AT!UDT=0,0,"192.168.0.31","192.168.0.33",8010

Response(s)

AT!UDT=0,0,"192.168.0.31","192.168.0.33",8010

OK

Read Command

AT!UDT?

Response(s)

Format:

AT!UDT=<Channel>,<index>,<Begin address>,<End address>,<Remote Port>

OK

Example:

AT!UDT?

AT!UDT=0,0,"192.168.0.31","192.168.0.33",8010

0,1,"0.0.0.0","0.0.0.0",0

0,2,"0.0.0.0","0.0.0.0",0

0,3,"0.0.0.0","0.0.0.0",0

OK

Parameter Description

<Channel>(num)

Serial port channel No, can't be omitted.

<index>(num)

Address table index, range from 0 to 3.

<Begin address>(str)

Remote beginning address.

<End address>(str)

Remote End address.

<Port>(num)

Remote port number.

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *In low-lost version, the index is always 0.*

Chapter 8 Hostlist

8.1 AT!HC Host list configuration

Syntax

Test Command

AT!HC=?

Response(s)

AT!HC=?

AT!HC=Channel(0),Retry Counter, Retry Timeout, Max TCP Links

OK

Read Command

AT!HC?

Response(s)

Format:

AT!HC=<Channel>,<retry times>,<retry timeout>,<max TCP links>

OK

Example:

AT!HC?

AT!HC=0,2,2,2

OK

Write Command

Format: AT!HC=<Channel>,<retry times>,<retry timeout>,<max TCP links>

Example: AT!HC=0,2,2,10

Response(s)

AT!HC=0,2,2,3

OK

Parameter Description

<Channel>(num)

Serial port channel No, can't be omitted.

<retry times>(num)

0-255 times to retry to connect a host

<retry timeout>(num)

0-255 timeout time to retry to connect a host

<max links>(num)

1~10 Maximum number of links

Notes

1. *This command is not supported in low-lost version.*
2. *Different versions of the supported links number is different*

8.2 AT!HHL Host list table configuration

Syntax

Test Command

AT!HHL=?

Response(s)

AT!HHL=?

AT!HHL=Channel(0),Index(

Write Command

Format: AT!HHL=<Channel>,<index>,<host>,<port>

Example1: AT!HHL=0,0,"192.168.0.31",8011

Example2: AT!HHL=0,1,"192.168.0.32",8012

Example3: AT!HHL=0,2,"192.168.0.33",8013

Example4: AT!HHL=0,3,"192.168.0.34",8014

[...]

Response(s)

AT!HHL=0,0,"192.168.0.31",8011

OK

Read Command

AT!HHL?

Response(s)

Format:

AT!HHL=<Channel>,<index>,<host>,<port>

[...]

OK

Example:

AT!HHL?

AT!HHL=0,0,"192.168.0.31",8011

0,1,"192.168.0.32",8012

0,2,"192.168.0.33",8013

0,3,"192.168.0.34",8014

0,4,"0.0.0.0",0

0,5,"0.0.0.0",0

0,6,"0.0.0.0",0

0,7,"0.0.0.0",0

0,8,"0.0.0.0",0

0,9,"0.0.0.0",0

0,10,"0.0.0.0",0

0,11,"0.0.0.0",0

OK

Parameter Description

<Channel>(num)

Serial port channel No, can't be omitted.

<index>(num)

0-11 hostlist table index

<host>(str)

0-255 IPV4 address or domain name

<port>(num)

0-65535 port number

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *This command is not supported in low-lost version.*

Chapter 9 Email

9.1 AT!SMTPC Smtp server setting

Syntax

Test Command

AT!SMTPC=?

Response(s)

OK

Read Command

AT!SMTPC?

Response(s)

AT!SMTPC=<smtp server>,<smtp port>

OK

Write Command

AT!SMTPC=<smtp server>[,<smtp port>]

Response(s)

OK

ERROR

Parameter Description

<smtp server>(str)

Domain name of mail(SMTP) server. The maximum string length is limited to 30 characters.

<smtp port>(num)

0-65535 listening port of mail server.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

9.2 AT!SEC Email sender configuration

Syntax

Test Command

AT!SEC=?

Response(s)

OK

Read Command

AT!SEC?

Response(s)

AT!SEC=<mail address>,<sender name>,<sender psw>

OK

Write Command

AT!SEC=<mail address>,<sender name>,<sender psw>

Response(s)

OK

ERROR

Parameter Description

<mail address>(str)

Email address of sender in format name@domain. The maximum string length is limited to 30 characters.

<sender name>(str)

Email account name of sender. The maximum string length is limited to 30 characters.

<sender psw>(str)

Email password of sender. The maximum string length is limited to 30 characters.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

9.3 AT!REC Email receiptor configuration

Syntax

Test Command

AT!REC=?

Response(s)

OK

Read Command

AT!REC?

Response(s)

AT!REC=<receitor1>,<receitor2>,<receitor3>

OK

Write Command

AT!REC=<receitor1>,<receitor2>,<receitor3>

Response(s)

OK

ERROR

Parameter Description

<receiptor1>(str)

<receiptor2>(str)

<receiptor3>(str)

Email address of receiptors in format name@domain. The maximum string length is limited to 30 characters.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

9.4 AT!ET Email trigger configuration

Syntax

Test Command

AT!ET=?

Response(s)

OK

Read Command

AT!ET?

Response(s)

AT!ET=<cold start>,<warm start>,<auth fail>,<address change>,<password change>,<DCD change>,<DSR change>

OK

Write Command

AT!ET=<cold start>,<warm start>,<auth fail>,<address change>,<password change>,<DCD change>,<DSR change>

Response(s)

OK

ERROR

Parameter Description

<cold start>(num)

0 disable email trigger by cold start

1 enable email trigger by cold start

<warm start>(num)

0 disable email trigger by warm start

1 enable email trigger by warm start

<auth fail>(num)

0 disable email trigger by authenticate fail

1 enable email trigger by authenticate fail

<address change>(num)

0 disable email trigger by IP address of device change

1 enable email trigger by IP address of device change

<password change>(num)

0 disable email trigger by user password change

1 enable email trigger by user password change

<DCD change>(num)

0 disable email trigger by state of DCD signal of serial port change

1 enable email trigger by state of DCD signal of serial port change

<DSR change>(num)

0 disable email trigger by state of DSR signal of serial port change

1 enable email trigger by state of DSR signal of serial port change

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

9.5 AT!ETEC Email trigger message property

Syntax

Test Command

AT!ETEC=?

Response(s)

OK

Read Command

AT!ETEC?

Response(s)

AT!ETEC=<subject>,<mail priority>,<notify interval>

OK

Write Command

AT!ETEC=<subject>,<mail priority>,<notify interval>

Response(s)

OK

ERROR

Parameter Description

<subject>(str)

Subject of email triggered by normal email trigger. The maximum string length is limited to 30 characters.

<mail priority>(num)

1 low

3 normal

5 high

<notify interval>(num)

0-99 re-send interval when fail to send mail

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

9.6 AT!EITC Email input trigger

Syntax

Test Command

AT!EITC=?

Response(s)

OK

Read Command

AT!EITC?

Response(s)

AT!EITC=<switch>,<channel sel>,<match bytes size>,<match byte1>,<match byte 2>,<match byte3>

OK

Write Command

AT!EITC=<switch>,<channel sel>,<match bytes size>,<match byte1>,<match byte 2>,<match byte3>

Response(s)

OK

ERROR

Parameter Description

<switch>(num)

0 disable mail trigger of serial input data

1 enable mail trigger of serial input data

<channel sel>(num)

0 channel 1

1 channel 0

<channel sel>(num)

1-3 match bytes size of input data of serial port

<match byte 1>(hex num)

0x0-0xFF character in hex format

<match byte 2>(hex num)

0x0-0xFF character in hex format

<match byte 3>(hex num)

0x0-0xFF character in hex format

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

9.7 AT!EITEC Email input trigger message property

Syntax

Test Command

AT!EITEC=?

Response(s)

OK

Read Command

AT!EITEC?

Response(s)

AT!EITEC=<subject>,<mail priority>,<min notify interval>,<re-notify interval>

OK

Write Command

AT!EITEC=<subject>,<mail priority>,<min notify interval>,<re-notify interval>

Response(s)

OK

ERROR

Parameter Description

<subject>(str)

Subject of email triggered by serial input data trigger. The maximum string length is limited

to 30 characters.

<mail priority>(num)

1 low

3 normal

5 high

<min notify interval>(num)

0-99 the minimum interval of email triggered by serial port input data

<re-notify interval>(num)

re-send interval when fail to send mail triggered by serial port input data

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

Chapter 10 PPPoE

10.1 AT!PC PPPoE configuration

Syntax

Test Command

AT!PC=?

Response(s)

OK

Read Command

AT!PC?

Response(s)

AT!PC=<user name>,<user psw>,<work mode>,<redials>,<redial intv>,<idle time>

OK

Write Command

AT!PC=<user name>,<user psw>,<work mode>,<redials>,<redial intv>,<idle time>

Response(s)

OK

ERROR

Parameter Description

<user name>(str)

PPPoE user name. The maximum string length is limited to 30 characters.

<user psw>(str)

PPPoE user password. The maximum string length is limited to 30 characters.

<work mode>(num)

PPPoE work mode.

0 disable

1 auto dial, the PPPoE interface is the default route.

2 dial on demand

4 adpative, dial automatically, the system will try PPPoE interface and other interfaces as

default route in sequence automatically.

<redials>(num)

0-255 Redial times.

<redial intv>(num)

0-255 Redial interval.

<idle time>(num)

0-65535 idle time limit.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

10.2 AT!PS PPPoE status

Syntax

Test Command

AT!PS=?

Response(s)

OK

Read Command

AT!PS?

Response(s)

AT!PS=<status>,<ip addr>,<gateway>,<dns1>,<dns2>

OK

Parameter Description

<status>(num)

0-2 PPPoE status.

0 disconnected

1 dialing

2 connected

<ip addr>(str)

Ip address obtained from PPPoE server.

<gateway>(str)

Gateway address obtained from PPPoE server.

<dns1>(str)

Preferred DNS server ip address obtained from PPPoE server.

<dns2>(str)

Alternate DNS server ip address obtained from PPPoE server.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

Chapter 11 User Mange

11.1 AT!UM User mange

Syntax

Test Command

AT!UM=?

Response(s)

OK

Read Command

AT!UM?

Response(s)

AT!UM=<No.>,<user name>,<user psw>

[...]

OK

Write Command

AT!UM=<No.>,<user name>,<user psw>

Response(s)

OK

ERROR

Parameter Description

< No. > (num)

0-4 user index

<user name>(str)

User name. The maximum string length is limited to 10 characters.

<user psw>(str)

User password. The maximum string length is limited to 10 characters.

Notes

1. *There is only one user "admin" with password "admin" at index 0 default. You can add new user at index 1-4, also, you can delete user by set the user name as "".*
2. *user index0~1 number is the system administrator has permission to modify the saved parameters.*
3. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
4. *This command is not supported in low-lost version.*

Chapter 12 FTP and Device Files

12.1 AT!LFOP Open device file

Syntax

Test Command

AT!LFOP=?

Response(s)

OK

Read Command

AT!LFOP?

Response(s)

OK

Write Command

AT!LFOP=<idx>,<lfn>,<ar>

Response(s)

OK

ERROR

Parameter Description

<idx>(num)

Index of file to open, used in other file index related command.

<lfn>(str)

local file name, absolutely or relative path of file to open. The maximum string length is limited to 20 characters.

<ar>(str)

access right of file, write or read only. ”w” is open to write, “r” is open to read.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

12.2 AT!LFCL Close device file

Syntax

Test Command

AT!LFCL=?

Response(s)

OK

Read Command

AT!LFCL?

Response(s)

OK

Write Command

AT!LFCL=<idx>

Response(s)

OK

ERROR

Parameter Description

<idx>(num)

Index of file opened to close.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

12.3 AT!LFLS List files of device

Syntax

Test Command

AT!LFLS=?

Response(s)

OK

Read Command

AT!LFLS?

Response(s)

OK

Execute Command

AT!LFLS

Response(s)

AT!LFLS=<fn>

……

OK

ERROR

Parameter Description

<fn>(str)

File name.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

12.4 AT!LFDL Delete device file

Syntax

Test Command

AT!LFDL=?

Response(s)

OK

Read Command

AT!LFDL?

Response(s)

OK

Write Command

AT!LFDL=<lfn>

Response(s)

OK

ERROR

Parameter Description

<lfn>(str)

local file name, absolutely or relative path of file to delete.

Notes

"dir.txt" can not be deleted from device.

Notes

1. *Required at the end of the command input hexadecimal data"0x0d" or "0x0d and 0x0a"*
2. *This command is not supported in low-lost version.*

12.5 AT!LFRD Read device file

Syntax

Test Command

AT!LFRD=?

Response(s)

OK

Read Command

AT!LFRD=?

Response(s)

OK

Write Command

AT!LFRD=<idx>,<seq>,<mn>

Response(s)

AT!LFRD=<idx>,<seq>,<len>

<data><fcs>

OK

ERROR

Parameter Description

<idx>(num)

Index of file opened to read.

<seq>(num)

Data bulk sequence number, begin from 1. If it is the same as the last RFRD command, request to retransmit.

<mn>(num)

Maximum number of bytes to read.

<len>(num)

Actually data read.

<data>(num)

The content of data read.

<fcs>(num)

2 bytes Verify code to check the data.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

12.6 AT!LFWR Write to device file

Syntax

Test Command

AT!LFWR=?

Response(s)

OK

Read Command

AT!LFWR=?

Response(s)

OK

Write Command

AT!LFWR=<idx>,<seq>,<mn>

Response(s)

AT!LFWR=<idx>,<seq>,<len>,<data><fcs>

OK

ERROR

Parameter Description

<idx>(num)

Index of file opened to write.

<seq>(num)

Sequence of data bulk to send, begin from 0. If it is the same as the last RFWR command, retransmit the same data bulk.

<mn>(num)

Number of bytes to write.

<len>(num)

Actually data written.

<data>(num)

The content of data to write.

<fcs>(num)

2 bytes Verify code to check the data.

Notes

1. *“dir.txt” in device storage can not be written.*
2. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
3. *This command is not supported in low-lost version.*

12.7 AT!LFMT Format file system of device

Syntax

Test Command

AT!LFMT=?

Response(s)

OK

Read Command

AT!LFMT?

Response(s)

OK

Execute Command

AT!LFMT

Response(s)

OK

ERROR

Parameter Description

None.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

12.8 AT!RCOP Open file of FTP server

Syntax

Test Command

AT!RCOP=?

Response(s)

OK

Read Command

AT!RCOP?

Response(s)

OK

Write Command

AT!RCOP=<idx>,<dh>,<un>,<up>

Response(s)

OK

ERROR

Parameter Description

<idx>$^{(num)}$

Index of ftp connection to open, used in other ftp connection index related command.

<dh>$^{(str)}$

Destination host, ip address format or host name.

<un>$^{(str)}$

User name for login.

<up>(str)

User password matches the user name.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

12.9 AT!RCCL Close file of FTP server

Syntax

Test Command

AT!RCCL=?

Response(s)

OK

Read Command

AT! RCCL?

Response(s)

OK

Write Command

AT! RCCL =<idx>

Response(s)

OK

ERROR

Parameter Description

<idx>(num)

Index of ftp connection opened, used in other ftp connection index related command.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

12.10 AT!RFLS List files of FTP server

Syntax

Test Command

AT!RFLS=?

Response(s)

OK

Read Command

AT!RFLS?

Response(s)

OK

Execute Command

AT!RFLS=<idx>

Response(s)

AT!RFLS=<idx>,<fn>
……
OK
ERROR

Parameter Description
<idx>(num)
Index of ftp connection opened, used in other ftp connection index related command.
<fp>(str)
File path or file name filter.
<fn>(str)
File name.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

12.11 AT!RFPUT Put device file to FTP server

Syntax

Test Command
AT!RFPUT=?
Response(s)
OK
Read Command
AT!RFPUT?
Response(s)
OK
Write Command
AT!RFPUT =<idx>,<sf>,<df>
Response(s)
OK
ERROR

Parameter Description

<idx>(num)
Index of ftp connection opened, used in other ftp connection index related command.
<sf>(str)
Source file name.
<df>(str)
Destination file name.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

12.12 AT!RFGET Get file of FTP server to device

Syntax

Test Command

AT!RFGET=?

Response(s)

OK

Read Command

AT!RFGET?

Response(s)

OK

Write Command

AT!RFGET=<idx>,<df>,<sf>

Response(s)

OK

ERROR

Parameter Description

<idx>(num)

Index of ftp connection opened, used in other ftp connection index related command.

<sf>(str)

Source file name. The maximum string length is limited to 20 characters.

<df>(str)

Destination file name. The maximum string length is limited to 20 characters.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

12.13 AT!RFOP Open file of FTP server

Syntax

Test Command

AT!RFOP=?

Response(s)

OK

Read Command

AT!RFOP?

Response(s)

OK

Write Command

AT! RFOP =<idx>,<fn>,<md>

Response(s)

OK

ERROR

Parameter Description

<idx>(num)

Index of ftp connection opened, used in other ftp connection index related command.

<fn>(str)

File name to open. The maximum string length is limited to 20 characters.

<md>(str)

File open mode. ”w” is open to write, “r” is open to read.

Notes

1. *The maximum time trying to connect to server is 20 seconds, when timeout, an error is return.*
2. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
3. *This command is not supported in low-lost version.*

12.14 AT!RFCL Close file of FTP server

Syntax

Test Command

AT!RFCL=?

Response(s)

OK

Read Command

AT!RFCL?

Response(s)

OK

Write Command

AT!RFCL=<idx>

Response(s)

OK

ERROR

Parameter Description

<idx>(num)

Index of ftp connection opened, used in other ftp connection index related command.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

12.15 AT!RFWR Write to file of FTP server

Syntax

Test Command

AT!RFWR=?

Response(s)

OK

Read Command

AT!RFWR?

Response(s)

OK

Write Command

AT!RFWR=<idx>, <seq>, <len>, <data>, <fcs>

Response(s)

OK

ERROR

Parameter Description

<idx>(num)

Index of ftp connection opened, used in other ftp connection index related command.

<seq>(num)

Sequence of data bulk to send, begin from 1. If it is the same as the last RFWR command, retransmit the same data bulk.

<len>(num)

Data length to write.

<data>(num)

Data stream to write.

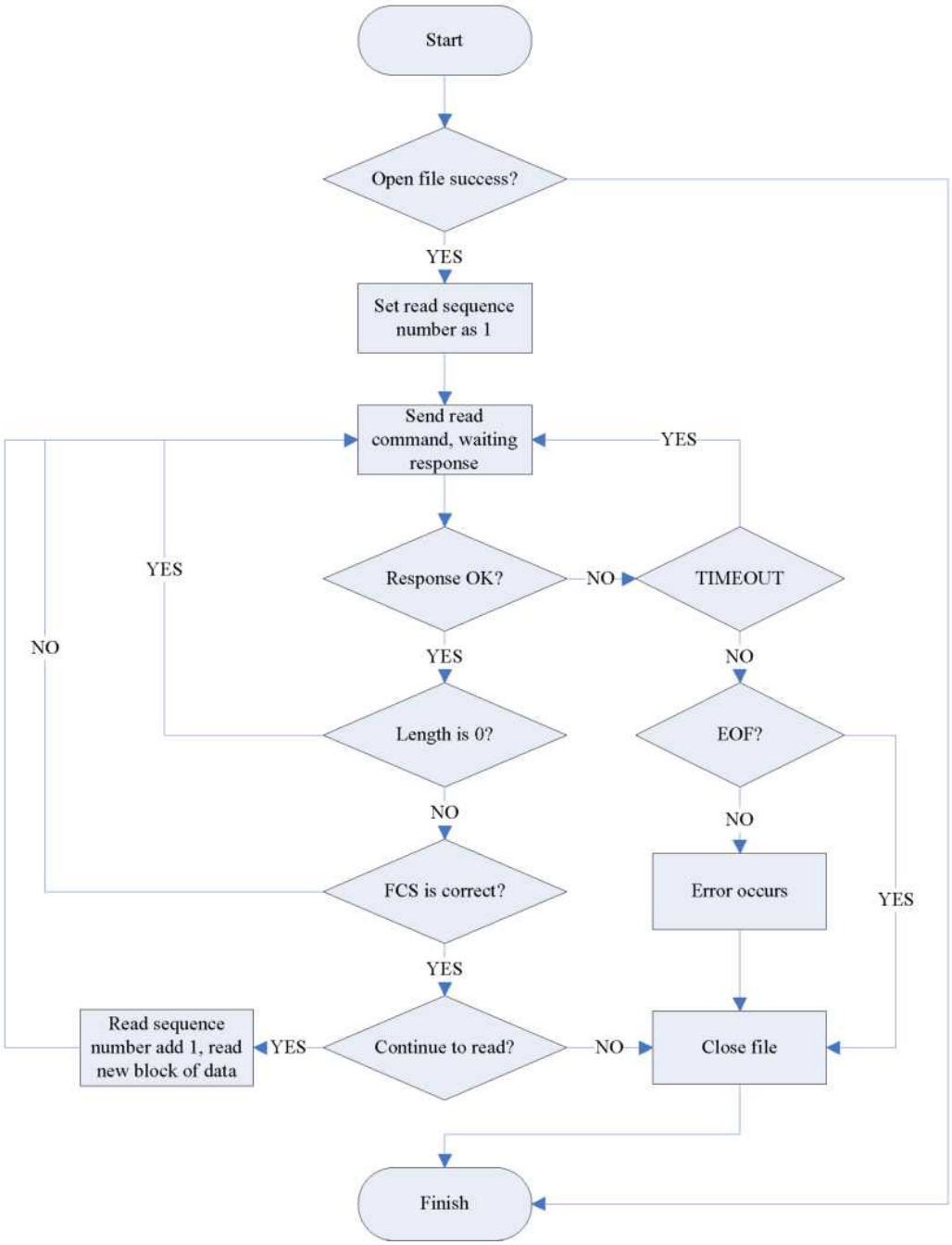
<fcs>(num)

2 bytes Verify code to check the data.

Notes

1. *Required at the end of the command input hexadecimal data“0x0d” or “0x0d and 0x0a”*
2. *This command is not supported in low-lost version.*

12.16 Common Read Flow diagram



12.17 Common Send Flow diagram