



ARM Cortex-M7 Series

Serial to Ethernet Converter

AT Command Set

USR-N510, USR-N520, USR-N540, USR-N580
USR-TCP232-E2, USR-TCP232-ED2

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1. Introduction

This document provides a detailed specification and a comprehensive listing for the whole set of AT commands for the ARM Cortex M7 Series serial to Ethernet converter. This document applies to USR-N510, USR-N520, USR-N540, USR-N580, USR-TCP232-E2, USR-TCP232-ED2 models.

2. AT Command Setting Approach

2.1. Network AT command mode

After the device is powered on and starts working, users can send AT commands through local network, that means the USR products must be in the same subnet with PC or any device that sends AT commands. The syntax and usage of the AT command are described in details later.

Send **WWW.USR.CN** strings through UDP broadcast to port 48899 (the remote host is set to 255.255.255.255:48899). If the module and the PC are on the same network segment, the module replies. As shown below.

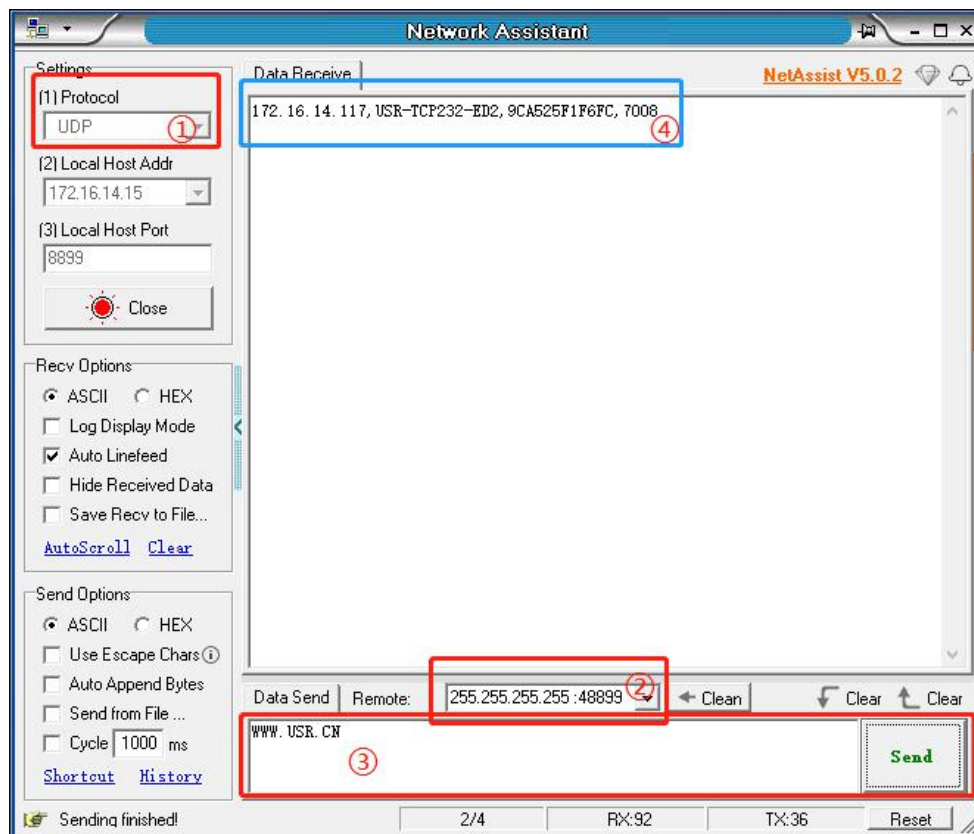


Figure 1 Enter Network AT Command Mode

AT this time, the module has entered the network AT command mode. If multiple devices respond at the same time, you only need to change the IP address of the remote host to be consistent with the IP address of the device to be set.

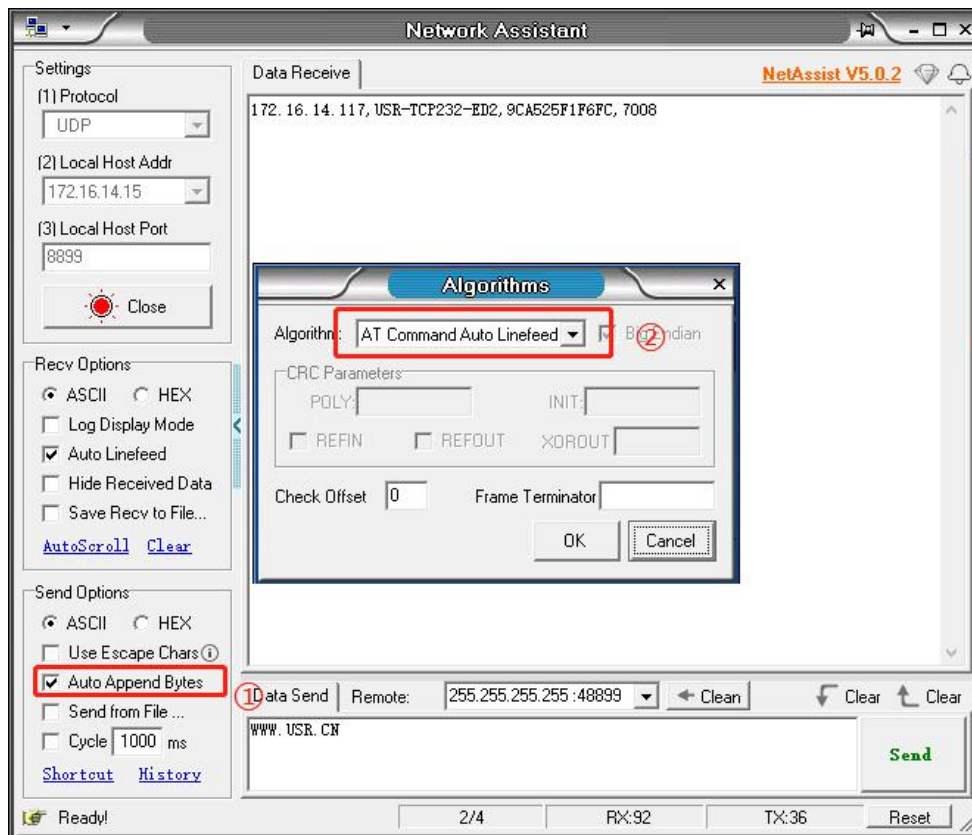


Figure 2 Check Auto Append Bytes

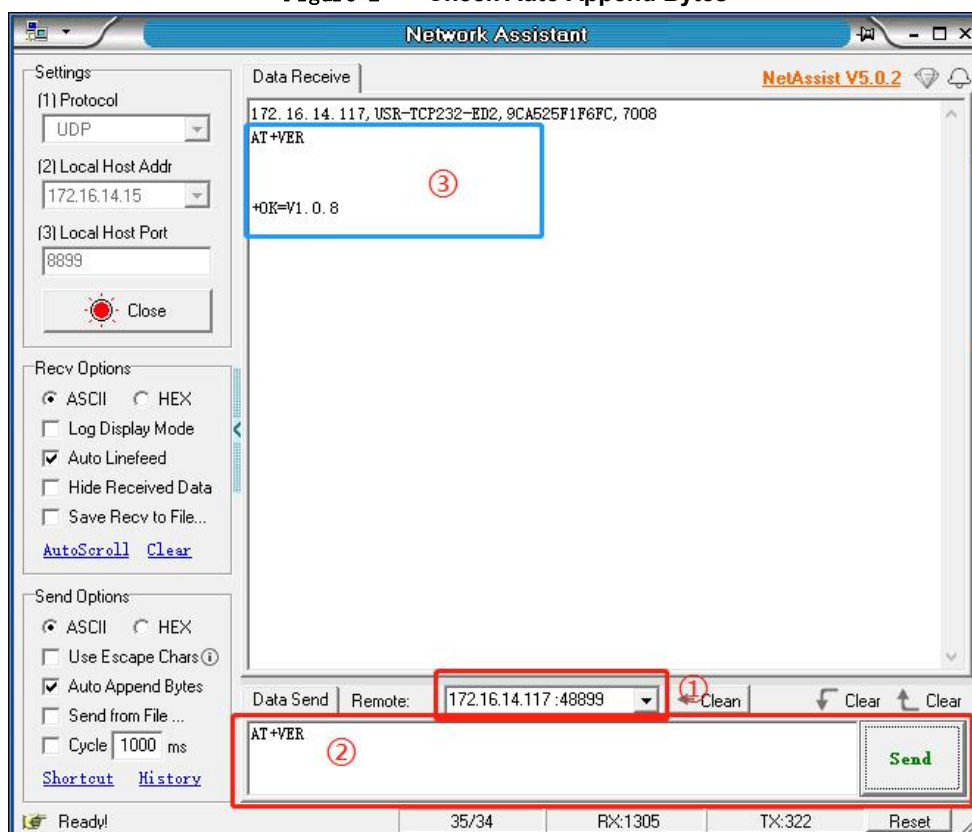


Figure 3 Send AT command

Now you can send AT command to the module. If no command is sent within 30 seconds, the module will automatically exit the Network AT command mode.

2.2. Serial AT command mode

After the device is powered on and starts working, you can send commands through the serial port to set device parameters. The syntax and usage of the AT command are described in details later.

The default parameters of the serial port are as follows: **Baud rate 115200, None Parity bit, 8 Data bits, 1 Stop bit.**

After the device is powered on and starts working, open the AT command debugging tool and set the serial port parameters.

Click ‘open’ and click ‘+++a’. The data window on the right receives ‘+ok’. AT this point, the device enters the command mode, and AT command parameters can be set.

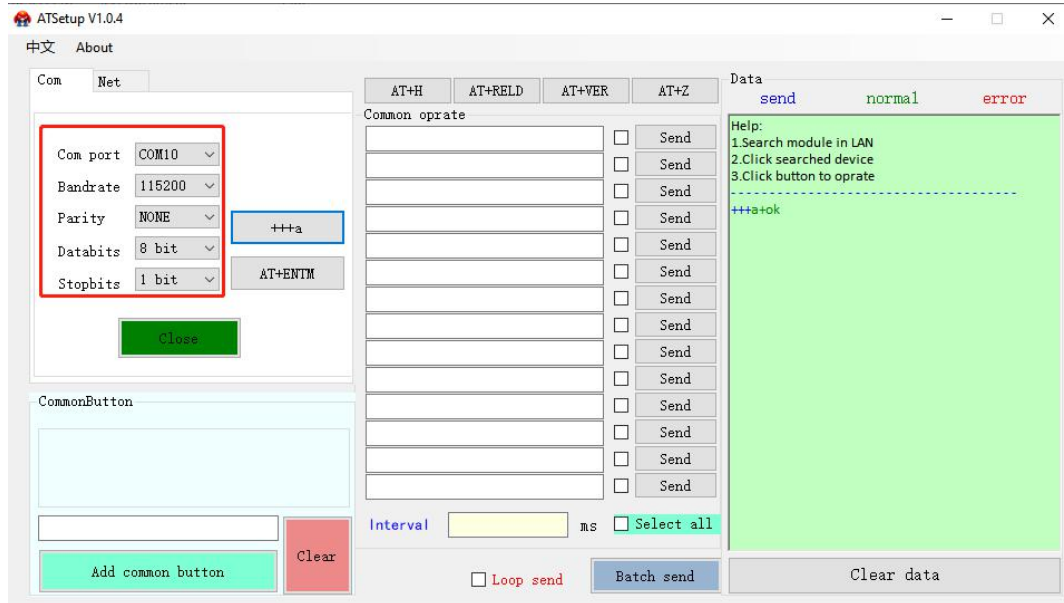


Figure 4 Enter Serial AT Command mode

To enter the AT command mode, input characters ‘+++’ and ‘a’ need to meet certain timing requirements, as shown below.

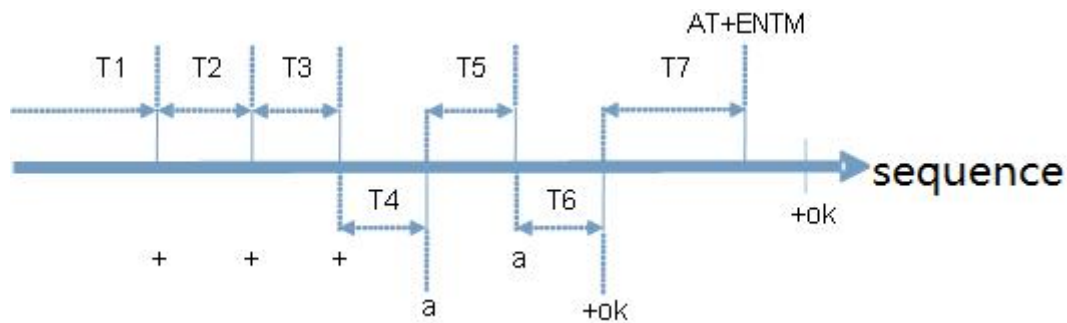


Figure 5 Timing sequence diagram

Timing sequence:

- T1 > Serial port data packaging interval
- T2 < 300ms
- T3 < 300ms
- T5 < 3s

To enter the command mode, the following procedure must be followed.

1. Start sending new packets, the device or tool send three continuous ‘+’ to the USR module, and when the module receives ‘+++’ sequence, it **replies with an ‘a’**
2. When the device or tool receives an ‘a’, it must send back an ‘a’ to the USR module within 3 seconds
3. After receiving ‘a’, the USR module **sends ‘+ok’** to the device or tool and enters the AT instruction mode
4. After receiving ‘+ok’, the device or tool knows that the USR module has entered AT instruction mode and can send AT commands to it.

To exit the command mode, the following steps are used.

1. The serial device or tool sends instructions AT+ENTM to the module
2. After receiving the command, the module returns ‘+ok’ and returns to its previous working mode

AT command basic syntax: <AT+><CMD>[OP] [para-1, para-2, para-3, para-4...]<CR>

Table 1 AT command syntax

Character	Definition	Required
s		
<>	Name enclosed in angle brackets is a syntactical element, they must be included. Angle brackets do not appear on command line.	Yes

[]	Optional parameter of a command or an optional part of AT information response. Square brackets do not appear on command line.	No
AT+	AT command header	Yes
CMD	Command code	Yes
OP	Operator e.g. '=' indicates Setting, 'NULL' indicates No operator	No
para-n	Parameters when setting	No
CR	Carriage return character, command line terminator character, 0X0D in ASCII	Yes

Response basic syntax: <CR><LF>+<RSP>[para-1, para-2, para-3, para-4...][CR][LF]

Table 2 Response syntax

Character	Definition	Required
CR	Carriage return character, 0X0D in ASCII	Yes
LF	Linefeed character, 0X0A in ASCII	Yes
+RSP	Response +OK indicates success ERR indicates fail	Yes
para-n	Parameters	No
CR	Carriage return character	Yes
LF	Linefeed character	Yes

2.3. AT command error code

Table 3 Error Code Overview

Error code	Description
ERR1	Invalid command syntax
ERR2	Invalid command code
ERR3	Invalid operator
ERR4	Wrong parameter or missing arguments
ERR5	Operation not allowed
ERR6	No operation permission

2.4. AT command set

Table 4 AT command set

No	Instruction	Description
1	E	Query/set echo status
2	Z	Restart the module
3	VER	Query firmware version
4	ENTM	Exit AT command mode
5	MAC	Query MAC address
6	RELD	Restore the factory Settings
7	WANN	Query/set WAN port parameters
8	DNS	Query/set DNS Server
9	WEBU	Query/set web console username and password
10	WEBPORT	Query/Set the web server port number
11	SEARCH	Query/Set the search keywords and UDP port
12	PLANG	Query/set the web language
13	UARTN	Query/set serial port parameters of PortN
14	UARTTLN	Query/set UART packaging parameters of PortN
15	SOCKMN	Query/set Socket M parameter of PortN
16	SOCKLMN	Query socket M connection status of PortN
17	WEBSOCKET1	Query/set WebSocket port NO.

18	REGENN	Query/set registration packet type of PortN
19	REGTCPN	Query/set registration packet location of PortN
20	REGUSRN	Query/set custom registration package of PortN, only support ASCII
21	REGCLOUDN	Query/set PUSR cloud device ID and password of PortN
22	HTPTPN	Query/Set HTTP request methods of PortN
23	HTPURLN	Query/set URL of PortN
24	HTPHEADN	Query/set HTTP Header information of PortN
25	HTPCHDN	Query/set filtering packet header of PortN
26	HEARTENN	Query/set heartbeat packet status of PortN
27	HEARTTPN	Query/set heartbeat packet direction of PortN
28	HEARTTMN	Query/set the heartbeat packet sending interval of PortN
29	HEARTDTN	Query/set user-defined heartbeat packets of PortN, only support ASCII
30	PDTIME	Query the production time
31	MID	Query/set the module name
32	RFCENN	Query/set RFC2217 baud rate synchronization of PortN
33	SOCKSLN	Query/set Socket A short-lived connection of PortN
34	SHORTON	Query/set Socket A short-lived connection timeout of PortN
35	RSTIM	Query/set the no-data restart time
36	UARTCLBUF	Query/set whether the serial port buffer is enabled
37	SOCKTONN	Query/set socket reconnection interval of PortN
38	MODTCPN	Query/set modbus TCP of PortN
39	MODPOLLN	Query/set modbus poll of PortN
40	MODTON	Query/set modbus response timeout of PortN
41	NETPRN	Query/set the network printing function of PortN
42	UDPONN	Do not filter remote IP or port in UDP mode of PortN
43	CFGTF	Save the current parameter as the default user parameter
44	PING	Test network connection
45	HEARTUSERN	Query/set user-defined heartbeat packets of PortN, both ASCII and HEX are supported
46	REGUSERN	Query/set custom registration package of PortN, both ASCII and HEX are supported
47	AT+WEBPOINT	Query/set operation method of websocket

2.5. AT command details

2.5.1. AT+E

- Function
Query/set echo status (The setting takes effect immediately)
- Format
 - ◆ Query
AT+E <CR>
<CR><LF>+OK=<on/off><CR><LF>
 - ◆ Set
AT+E=<on/off><CR>
<CR><LF>+OK<CR><LF>
- Parameter
 - ◆ on:enable command echo, send back command header and command code, <CR> not included.
 - ◆ off:the command header and command code are not echoing

E. g. AT+E=ON

2.5.2. AT+Z

- Function
Restart the module

- Format
 - ◆ Execute
 - AT+Z<CR>**
 - <CR><LF>+OK<CR><LF>**
- Parameter:none
 - <Note>:After the command is executed, the module restarts

2.5.3. AT+VER

- Function
 - Query firmware version
- Format
 - ◆ Query
 - AT+VER<CR>**
 - <CR><LF>+OK=<ver><CR><LF>**
- Parameter
 - ◆ ver: firmware version

2.5.4. AT+ENTM

- Function
 - Exit AT command mode
- Format
 - ◆ Execute
 - AT+ENTM<CR>**
 - <CR><LF>+OK<CR><LF>**
- Parameter:none

2.5.5. AT+MAC

- Function
 - Query MAC address
- Format
 - ◆ Query
 - AT+MAC<CR>**
 - <CR><LF>+OK=<mac><CR><LF>**
- Parameter
 - ◆ mac: MAC address (e. g. 9CA525C4F2F9)

2.5.6. AT+RELD

- Function
 - Restore the factory Settings
- Format
 - ◆ Execute
 - AT+RELD<CR>**
 - <CR><LF>+OK<CR><LF>**
- Parameter: none

2.5.7. AT+WANN

- Function
 - Query/set WAN port parameters
- Format
 - ◆ Query

AT+WANN<CR>

<CR><LF>+OK=<mode, address, mask, gateway><CR><LF>

◆ Set

AT+WANN=<mode, address, mask, gateway><CR>

<CR><LF>+OK<CR><LF>

➤ Parameters

◆ mode:method of getting IP

- static:static IP
- DHCP:automatic (address,mask,gateway omitted)

◆ address: IP address

◆ mask:subnet mask

◆ gateway:gateway

E. g. AT+WANN=static,192.168.0.7,255.255.255.0,192.168.0.1

2.5.8. AT+DNS

➤ Function

Query/set DNS Server

➤ Format

◆ Query

AT+DNS<CR>

<CR><LF>+OK=< address ><CR><LF>

◆ Set

AT+DNS=< address ><CR>

<CR><LF>+OK<CR><LF>

➤ Parameter

◆ address: DNS server address

E. g. AT+DNS=208.67.222.222

2.5.9. AT+WEBU

➤ Function

Query/set web console username and password

➤ Format

◆ Query

AT+WEBU<CR>

<CR><LF>+OK=<username, password><CR><LF>

◆ Set

AT+WEBU<CR>

<CR><LF>+OK =<username, password><CR><LF>

➤ Parameters

◆ username:up to 16 characters,can' t be NULL

◆ password:up to 16 characters,can' t be NULL

E. g. AT+WEBU=admin,admin

2.5.10. AT+WEBPORT

➤ Function

Query/Set the web server port number

➤ Format

◆ Query

AT+WEBPORT<CR>

<CR><LF>+OK=<port><CR><LF>

◆ Set

AT+WEBPORT<CR>

<CR><LF>+OK =<port><CR><LF>

➤ Parameter

- ◆ port:port NO. of web server, default 80

E. g. AT+WEBPORT=80

2.5.11. AT+SEARCH

➤ function

Query/Set the search keywords and UDP port

➤ Format

◆ Query

AT+SEARCH<CR>

<CR><LF>+OK=<port, keywords><CR><LF>

◆ Set

AT+SEARCH =<port, keywords><CR><LF>

<CR><LF>+OK<CR><LF>

➤ Parameters

- ◆ port: UDP port, default 48899
- ◆ keywords: default WWW.USR.CN (up to 20 characters)

E. g. AT+SEARCH=48899, WWW.USR.CN

2.5.12. AT+PLANG

➤ Function

Query/set the web language

➤ Format

◆ Query

AT+ PLANG <CR>

<CR><LF>+OK=<language><CR><LF>

◆ Set

AT+PLANG =<language><CR>

<CR><LF>+OK<CR><LF>

➤ Parameter

◆ language

- CN Chinese
- EN English

E. g. AT+PLANG=CN

2.5.13. AT+UARTN(N:Serial port number, 1~8)

➤ Function

Query/set serial port parameters of PortN

➤ Format

◆ Query

AT+UARTN<CR>

<CR><LF>+OK=<baudrate, data_bits, stop_bit, parity, flowctrl ><CR><LF>

◆ Set

AT+UARTN=<baudrate, data_bits, stop_bit, parity, flowctrl ><CR><LF>

<CR><LF>+OK<CR><LF>

- Parameters
 - ◆ baudrate
 - 600~921.6K(bps)
 - ◆ data_bits:7,8
 - ◆ stop_bits:1,2
 - ◆ parity:
 - NONE
 - EVEN
 - ODD
 - ◆ flowctrl
 - NFC: none
 - FCR: software control flow XON,XOFF
 - FCH: hardware control flow(only RS232 and UART TTL support)

E. g. AT+UART1=115200, 8, 1, NONE, NFC

2.5.14. AT+UARTTLN

- Function

Query/set UART packaging parameters of PortN
- Format
 - ◆ Query


```
AT+ UARTTLN<CR>
<CR><LF>+OK=<time, length><CR><LF>
```
 - ◆ Set


```
AT+ UARTTLN=<time, length> <CR>
<CR><LF>+OK<CR><LF>
```
- Parameters
 - ◆ time: Byte interval between packets, 0~255 ms.
 - ◆ length: Maximum length of a packet, 0~1460 byte. If the interval is not reached and the received packet length reaches the maximum, the packet is packed and sent.

E. g. AT+UARTTL1=0, 0

2.5.15. AT+SOCKMN(M:socket number, A~H.N:Serial port number, 1~8)

- Function

Query/set Socket M parameter of PortN
- ◆ Query


```
AT+SOCKMN<CR>
<CR><LF>+OK=<protocol, IP, port ><CR><LF>
```
- ◆ Set


```
AT+SOCKMN=< protocol, IP, port ><CR>
<CR><LF>+OK<CR><LF>
```
- Parameter
 - ◆ Protocol
 - TCPS TCP Server
 - TCPC TCP Client
 - UDPS UDP Server
 - UDPC UDP Client
 - HTPC Httpd Client
 - ◆ IP: When the module is set to Client, the IP address is the server IP address

◆ Port: 0~65535

E. g. AT+SOCKA1=TCPC, 192. 168. 0. 201, 8234

2. 5. 16. AT+SOCKLKMN

➤ Function

Query socket M connection status of PortN

◆ Query

```
AT+ SOCKLKMN<CR>
<CR><LF>+OK=<sta><CR><LF>
```

➤ Parameter

◆ Sta

- IDLE: Initialization status
- LISTEN: When the module works as a TCP Server, it is listening for connection access
- CONNECTING: The module is building a connection to the TCP Server
- CONNECTED: The TCP connection to TCP server of the module has been established
- CONNECTED (n) : Number of TCP clients connected to the module
- ERROR: The module is abnormally disconnected

2. 5. 17. AT+WEBSOCKET1

➤ Function

Query/set WebSocket port NO.

➤ Format

◆ Query

```
AT+ WEBSOCKET1<CR>
<CR><LF>+OK=<port><CR><LF>
```

◆ Set

```
AT+ WEBSOCKET1=<port> <CR>
<CR><LF>+OK<CR><LF>
```

➤ Parameter

◆ Port:listen port NO.

E. g. AT+WEBSOCKET1=123

2. 5. 18. AT+REGENN

➤ Function

Query/set registration packet type of PortN

➤ Format

◆ Query

```
AT+REGENN <CR>
<CR><LF>+OK=<status><CR><LF>
```

◆ Set

```
AT+REGENN =<status><CR>
<CR><LF>+OK<CR><LF>
```

➤ Parameter

◆ status

- USR:User-defined registration package, up to 40 characters
- MAC:MAC address
- CLOUD: PUSR cloud ID and password
- OFF: disable this function

E. g. AT+REGEN1=USR

2. 5. 19. AT+REGTCPN

➤ Function

Query/set registration packet location of PortN

➤ Format

◆ Query

```
AT+REGTCPN<CR>
<CR><LF>+OK=< status><CR><LF>
```

◆ Set

```
AT+REGTCPN =< status><CR>
<CR><LF>+OK<CR><LF>
```

➤ Parameter

◆ status

- First: A registration package is sent only the first time you connect to the server
- Every: Add a registration packet before each packet sent to the server
- ALL: both are supported

E. g. AT+REGTCP1=all

2. 5. 20. AT+REGUSRN

➤ Function

Query/set custom registration package of PortN, only support ASCII

➤ Format

◆ Query

```
AT+ REGUSRN<CR>
<CR><LF>+OK=<data><CR><LF>
```

◆ Set

```
AT+ REGUSRN =<data><CR>
<CR><LF>+OK<CR><LF>
```

➤ Parameter

◆ data: up to 40 characters

E. g. AT+REGUSR1=12345

2. 5. 21. AT+REGCLOUDN

➤ Function

Query/set PUSR cloud device ID and password of PortN

➤ Format

◆ Query

```
AT+REGCLOUDN<CR>
<CR><LF>+OK=<ID, CODE><CR><LF>
```

◆ Set

```
AT+REGCLOUDN=<ID, CODE><CR>
<CR><LF>+OK<CR><LF>
```

➤ Parameter

◆ ID: device ID

◆ CODE: password

E. g. AT+REGCLOUD1=12345678901234567890, 12345786

2. 5. 22. AT+HTPTPN

➤ Function

Query/Set HTTP request methods of PortN

- Format
 - ◆ Query
 - AT+HTPTPN<CR>
 - <CR><LF>+OK=< status><CR><LF>
 - ◆ Set
 - AT+HTPTPN=< status><CR>
 - <CR><LF>+OK<CR><LF>
- Parameter
 - ◆ status
 - GET: request method get
 - POST: request method post

E. g. AT+HTPTP1=GET

2.5.23. AT+HTPURLN

- Function

Query/set URL of PortN
- Format
 - ◆ Query
 - AT+HTPURLN<CR>
 - <CR><LF>+OK=<URL><CR><LF>
 - ◆ Set
 - AT+HTPURLN =<URL><CR>
 - <CR><LF>+OK<CR><LF>
- Parameter
 - ◆ URL: up to 99 characters.

E. g. AT+HTPURL1=1/PHP

2.5.24. AT+HTPHEADN

- Function

Query/set HTTP Header information of PortN
- Format
 - ◆ Query
 - AT+HTPHEADN<CR>
 - <CR><LF>+OK =<string><CR><LF>
 - ◆ Set
 - AT+HTPHEADN =<string><CR>
 - <CR><LF>+OK<CR><LF>
- Parameter
 - ◆ string: up to 180 characters

Note: Carriage return newlines are represented by <<CRLF>> escape characters

E. g. AT+HTPHEAD=Accept:text<<CRLF>>

2.5.25. AT+HTPCHDN

- Function

Query/set filtering packet header of PortN
- Format
 - ◆ Query
 - AT+ HTPCHDN <CR>
 - <CR><LF>+OK=<sta><CR><LF>

◆ Set
 AT+ HTPCHDN =<sta><CR>
 <CR><LF>+OK<CR><LF>

➤ Parameter

◆ Sta

- ON: enable
- OFF: disable

E. g. AT+HTPCHD1=ON

2. 5. 26. AT+HEARTENN

➤ Function

Query/set heartbeat packet status of PortN

➤ Format

◆ Query
 AT+ HEARTENN <CR>
 <CR><LF>+OK=< status><CR><LF>

◆ Set
 AT+ HEARTENN =< status><CR>
 <CR><LF>+OK<CR><LF>

➤ Parameter

◆ status

- ON: enable
- OFF: disable

E. g. AT+HEARTEN1=ON

2. 5. 27. AT+HEARTTPN

➤ Function

Query/set heartbeat packet direction of PortN

➤ Format

◆ Query
 AT+ HEARTTP <CR>
 <CR><LF>+OK=< type><CR><LF>

◆ Set
 AT+ HEARTTP =< type ><CR>
 <CR><LF>+OK<CR><LF>

➤ Parameter

◆ status

- NET: send to Ethernet port
- COM: send to serial port

E. g. AT+HEARTTP1=NET

2. 5. 28. AT+HEARTTMN

➤ Function

Query/set the heartbeat packet sending interval of PortN

➤ Format

◆ Query
 AT+ HEARTTM <CR>
 <CR><LF>+OK=< time><CR><LF>

◆ Set

AT+ HEARTTM =< time><CR>

<CR><LF>+OK<CR><LF>

➤ Parameter

- ◆ Time: default 30s, range 1~65535s

E. g. AT+HEARTTM1=30

2.5.29. AT+HEARTDTN

➤ Function

Query/set user-defined heartbeat packets of PortN, only support ASCII

➤ Format

- ◆ Query

AT+ HEARTDT <CR>

<CR><LF>+OK=< data><CR><LF>

- ◆ Set

AT+ HEARTDT =< data><CR>

<CR><LF>+OK<CR><LF>

➤ Parameter

- ◆ data: up to 40 characters

E. g. AT+HEARTDT1=www.usr.cn

2.5.30. AT+PDTIME

➤ Function

Query the production time

➤ Format

- ◆ Query

AT+PDTIME<CR>

<CR><LF>+OK=<time><CR><LF>

➤ Parameter

- ◆ Time: production time e.g. 2016-10-18 11:20:02

2.5.31. AT+MID

➤ Function

Query/set the module name

➤ Format

- ◆ Query

AT+ MID <CR>

<CR><LF>+OK=< name ><CR><LF>

- ◆ Set

AT+ MID =< name ><CR>

<CR><LF>+OK<CR><LF>

➤ Parameter

- ◆ name: up to 32 characters, can't be null

E. g. AT+MID =USR-N540

2.5.32. AT+RFCENN

➤ Function

Query/set RFC2217 baud rate synchronization of PortN

➤ Format

- ◆ Query

AT+RFCENN<CR>
 <CR><LF>+OK=<status><CR><LF>

◆ Set

AT+ RFCENN =<status><CR>
 <CR><LF>+OK<CR><LF>

➤ Parameter

- ON: enable
- OFF: disable

E. g. AT+RFCEN=ON

2.5.33. AT+SOCKSLN

➤ Function

Query/set Socket A short-lived connection of PortN

➤ Format

◆ Query

AT+ SOCKSLN <CR>
 <CR><LF>+OK=<sta><CR><LF>

◆ Set

AT+ SOCKSLN =<sta><CR>
 <CR><LF>+OK<CR><LF>

➤ Parameter

◆ sta

- ON: enable
- OFF: disable

E. g. AT+SOCKSL1 =ON

2.5.34. AT+SHORTON

➤ Function

Query/set Socket A short-lived connection timeout of PortN

➤ Format

◆ Query

AT+ SHORTON <CR>
 <CR><LF>+OK=<time><CR><LF>

◆ Set

AT+ SHORTON =<time><CR>
 <CR><LF>+OK<CR><LF>

➤ Parameter

◆ time: 3-255s

E. g. AT+SHORT01=3

2.5.35. AT+RSTIM

➤ Function

Query/set the no-data restart time

➤ Format

◆ Query

AT+ RSTIM <CR>
 <CR><LF>+OK=<time><CR><LF>

◆ Set

AT+ RSTIM =<time><CR>

<CR><LF>+OK<CR><LF>

- Parameter
 - ◆ time: default 0 disable, range 60-65535s

E. g. AT+RSTIM =3600

2. 5. 36. AT+UARTCLBUF

- Function

Query/set whether the serial port buffer is enabled

- Format
 - ◆ Query


```
AT+ UARTCLBUF <CR>
<CR><LF>+OK=<sta><CR><LF>
```

- ◆ Set


```
AT+ UARTCLBUF =<sta><CR>
<CR><LF>+OK<CR><LF>
```

- Parameter
 - ◆ sta
 - ON: enable
 - OFF:disable

E. g. AT+UARTCLBUF =ON

2. 5. 37. AT+SOCKTONN

- Function

Query/set socket reconnection interval of PortN

- Format
 - ◆ Query


```
AT+ SOCKTONN <CR>
<CR><LF>+OK=<time><CR><LF>
```

- ◆ Set


```
AT+ SOCKTONN =<time><CR>
<CR><LF>+OK<CR><LF>
```

- Parameter
 - ◆ time: range 0~99999s, default 0s,close reconnection

E. g. AT+SOCKTONN =86400

2. 5. 38. AT+MODTCPN

- Function

Query/set modbus TCP of PortN

- Format
 - ◆ Query


```
AT+ MODTCPN <CR>
<CR><LF>+OK=<sta><CR><LF>
```

- ◆ Set


```
AT+ MODTCPN =<sta><CR>
<CR><LF>+OK<CR><LF>
```

- Parameter
 - ◆ sta
 - ON: enable
 - OFF: disable

E. g. AT+MODTCP1=ON

2.5.39. AT+MODPOLLN

- Function
Query/set modbus poll of PortN
- Format
 - ◆ Query
AT+ MODPOLLN <CR>
<CR><LF>+OK=<sta><CR><LF>
 - ◆ Set
AT+ MODPOLLN =<sta><CR>
<CR><LF>+OK<CR><LF>
- Parameter
 - ◆ sta
 - ON: enable
 - OFF: disable

E. g. AT+MODPOLL1=ON

2.5.40. AT+MODTON

- Function
Query/set modbus response timeout of PortN
- Format
 - ◆ Query
AT+ MODTON <CR>
<CR><LF>+OK=<time><CR><LF>
 - ◆ Set
AT+ MODTON =<time><CR>
<CR><LF>+OK<CR><LF>
- Parameter
 - ◆ time: 10~9999s, default 200s

E. g. AT+MODT01=200

2.5.41. AT+NETPRN

- Function
Query/set the network printing function of PortN
- Format
 - ◆ Query
AT+ NETPRN <CR>
<CR><LF>+OK=<sta><CR><LF>
 - ◆ Set
AT+ NETPRN =<sta><CR>
<CR><LF>+OK<CR><LF>
- Parameter
 - ◆ sta
 - ON: enable
 - OFF: disable

E. g. AT+NETPR1=ON

2.5.42. AT+UDPONN

➤ Function

Do not filter remote IP or port in UDP mode of PortN

➤ Format

◆ Query

```
AT+ UDPONN <CR>
<CR><LF>+OK=<sta><CR><LF>
```

◆ Set

```
AT+ UDPONN =<sta><CR>
<CR><LF>+OK<CR><LF>
```

➤ Parameter

◆ sta

- ON: Do not filter remote IP or port
- OFF: filter remote IP or port

E. g. AT+UDPONN=ON

2.5.43. AT+CFGTF

➤ Function

Save the current parameter as the default user parameter

➤ Format

◆ Set

```
AT+ CFGTF <CR>
<CR><LF>+OK=<sta><CR><LF>
```

➤ Parameter

◆ Sta

saved: done

E. g. AT+CFGTF

2.5.44. AT+PING

➤ Function

Test network connection

➤ Format

◆ Set

```
AT+ PING=<ip><CR>
<CR><LF>+OK<CR><LF>
```

➤ Parameter

- ◆ IP: Destination IP address or domain name. The maximum length of domain name is 30 bytes

E. g. AT+PING=www.baidu.com

2.5.45. AT+HEARTUSERN

➤ Function

Query/set user-defined heartbeat packets of PortN, both ASCII and HEX are supported

➤ Format

◆ Query

```
AT+ HEARTUSERN <CR>
<CR><LF>+OK=< data, type ><CR><LF>
```

◆ Set

```
AT+ HEARTUSERN =< data, type ><CR>
<CR><LF>+OK<CR><LF>
```

- Parameters
 - ◆ data: user-defined heartbeat packets, up to 40 characters in ASCII, up to 40 characters in HEX
 - ◆ type: format ,ASCII or HEX
- E. g. AT+HEARTUSERN = 01020305, HEX

2.5.46. AT+REGUSERN

- Function

Query/set custom registration package of PortN, both ASCII and HEX are supported
- Format
 - ◆ Query


```
AT+ REGUSERN <CR>
<CR><LF>+OK=< data, type ><CR><LF>
```
 - ◆ Set


```
AT+ REGUSERN =< data, type ><CR>
<CR><LF>+OK<CR><LF>
```
- Parameters
 - ◆ data: custom registration package, up to 40 characters in ASCII, up to 40 characters in HEX
 - ◆ type: format ,ASCII or HEX

E. g. AT+REGUSERN=01020305, HEX

2.5.47. AT+WEBPOINT

- Function

Query/set operation method of websocket
- Format
 - ◆ Query


```
AT+WEBPOINT<CR>
<CR><LF>+OK=<sta><CR><LF>
```
 - ◆ Set


```
AT+WEBPOINT=<sta><CR>
<CR><LF>+OK<CR><LF>
```
- Parameter
 - ◆ sta
 - OFF: disable
 - UARTn: Serial port n Establish a WebSocket connection
 - LOG: monitoring equipment operation.log information

E. g. AT+WEBPOINT=UART1

3. Contact Us

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5. Revision History

Version	Date	Author	Description
1.0.0	2022.3.30	Dean, Gao	Initial