



AT Commands Manual

E870-W1



1. AT command

1. All commands must be valid in configuration mode.
2. All AT formats end with "\r\n".
3. The responses of all commands start with "\r\n" and end with "\r\n".
4. All "\r" and "\n" in this article refer to the conversion characters of carriage return and line feed, but strings.

Error code table:

error code	illustrate
- 1	invalid command format
- 2	invalid command
- 3	not yet defined
- 4	invalid parameter
- 5	not yet defined

1.1 Enter AT command

Send +++ without line break, send a correct AT command within 5S after receiving \r\n+OK\r\n to enter the configuration mode.

【Example】

```
send + ++ first
Received\r\n+OK\r\n
Resend A T\r\n
Received\r\n+OK\r\n
```

1.2 Exit AT command

instruction	EXAT
Function	Exit AT command mode
send	AT+ EXAT <CR><LF>
return	<CR><LF>+OK<CR><LF>

【Example】

```
Send: A T+EXAT \r\n
Received: \r\n+OK\r\n
```

1.3 Reboot device

instruction	REBT
Function	reboot device
send	AT+REBT<CR><LF>
return	<CR><LF>+OK<CR><LF>

【Example】

Send: A T +REBT\ r\n

Received: \ r\n +OK\r\n

1.4 Reset

instruction	RESTORE
Function	reset
send	AT+RESTORE<CR><LF>
return	<CR><LF>+OK<CR><LF>

【Example】

Send: A T+ RESTORE\ r\n

Received: \ r\n +OK\r\n

Wait for the device to restart.

1.5 Query the firmware version

instruction	VER
Function	Query the firmware version
send	AT+VER<CR><LF>
return	<CR><LF>+OK=<verString><CR><LF>

【Example】

Send: A T+ VER\ r\n

Received: \ r\n +OK=9024-0-10 \r\n

1.6 Query device ID

instruction	SN
Function	Query device ID number
send	AT+SN<CR><LF>
return	<CR><LF>+OK=<snString><CR><LF>

【Example】

Send: A T+ SN \ r\n

Received: \ r\n +OK =xxxxxxxxxxxxxxxxx \r\n

The SN code of each device is different.

1.7 Query MAC address

instruction	MAC
Function	Query MAC address
send	AT+ MAC <CR><LF>
return	<CR><LF>+OK=< MAC String><CR><LF>

【Example】

Send: A T+ MAC \ r\n

Received: \ r\n +OK =xxxxxxxxxxxxxxxxx \r\n

1.8 Query/set idle restart time

instruction	AT+FREE_RESTART=< sw,time >
Function	Query/set idle restart time
send (query)	AT+FREE_RESTART
return(query)	<CR><LF>+OK=< sw ,time ><CR><LF>
send (settings)	AT+SOCK=<sw ,time >
return(set)	<CR><LF>+OK<CR><LF>
Remark	SW: Whether to enable idle restart: 0 (off), 1 (on) Time: The idle restart time, the unit is minutes, the value range that time can set is 5-60*24*7, if the setting is less than 5, it will be regarded as setting failure.

【Example】

settings :

Send: A T + FREE_RESTART = 1 , 120 \ r\n

Received:\r\n+OK\r\n

Query : Send: A T + FREE_RESTART \ r\n

Received: \r\n+OK =1,120 \r\n

1.9 Query/configure WIFI parameters

instruction	WIFI _
Function	Query/configure WIFI parameters
send (query)	AT+ WIFI <CR><LF>
return(query)	<CR><LF>+OK< ssid , pass ><CR><LF>
send (configuration)	AT+ WIFI =< ssid , pass ><CR><LF>
return (configuration)	<CR><LF>+OK<CR><LF>
Remark	<p>ssid: wifi account name: that is, the hotspot name of the router, avoid using Chinese, use English characters and numbers, the maximum length is 32</p> <p>pass: wifi password: the password of the target route, avoid using Chinese, use English characters and numbers, the maximum length is 16.</p> <p>Note: If you want to set it as STA to connect to WiFi without password (open WiFi), you need to set the pass of WiFi to x (lowercase x), and you cannot fill in the blank</p>

【Example】

Inquire:

Send: A T+WIFI \ r\n

Received: \r\n+OK= EBYTE_TEST,12345678 \r\n

set up: Configure connection hotspot , hotspot name is EBYTE_TEST , password is 1 2345678

Send: A T+ WIFI = EBYTE_TEST,12345678 \ r\n

Received:\r\n+OK\r\n

1.10 Query/configure WIFI IP setting parameters

instruction	WIFI_IP _
Function	Query/configure WIFI setting parameters
send (query)	AT+ WIFI_IP <CR><LF>
return(query)	<CR><LF>+OK = < ip_mode , static_ip ,net_mask,get_way_ip,dns_addr ><CR><LF>
send (configuration)	AT+ WIFI_IP =< ip_mode , static_ip,net_mask,getway_ip,dns_addr ><CR><LF>
return (configuration)	<CR><LF>+OK<CR><LF>
Remark	<p>ip_mode : ip mode 0 : DHCP mode 1 : static ip mode</p> <p>static_ip : ip when in static ip mode</p> <p>net_mask : subnet mask</p> <p>getway_ip : routing address</p> <p>d ns_addr : dns server address</p> <p>The setting length cannot exceed 48 bits</p>

1.11 Query WIFI RSSI

instruction	CSQ
Function	Query WIFI RSSI
send	AT+ CSQ <CR><LF>
return	<CR><LF>+OK=< RSSIValue ><CR><LF>

【Example】

Send: A T+ CSQ \ r\n

Received:\r\n+OK=xxxxxxxxxxxx\r\n

1.12 Query/configure serial port parameters

instruction	UART
Function	Query/configure serial port parameters
send (query)	AT+UART=?<CR><LF>
return(query)	<CR><LF>+OK<baudrate,uartData,uartStop,parity,uartFlow,packLen,packTime><CR><LF>
send (configuration)	AT+UART=<baudrate,uartData,uartStop,parity,uartFlow,packLen,packTime><CR><LF>
return (configuration)	<CR><LF>+OK<CR><LF>
Remark	Baudrate, baud rate: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400, 460800- Uartdata, data bits: 8, 7 Uartstop, stop bits: 1, 2 Parity, check digit: NONE, ODD, EVEN Uartflow, flow control: 0 is off, reserved temporarily invalid. Packlen, packing length: 64 ~ 1536 , default 1024 Packtime, packing time: 15 ~ 1500 , unit ms, default 40 ms

【Example】

Inquire:

Send: A T+ UART=?\ r\n

Received:\r\n+OK=115200,8,1,NONE,0,1024,10\r\n

set up:

Configure the baud rate to be 9600, the data bit to be 8, the stop bit to be 1, no parity and no flow control, the packing length to be 1024, and the packing time to be 10ms.

Send: A T+ UART=9600,8,1,NONE,0,1024,10\ r\n

Received:\r\n+OK\r\n

1.13 Query/set network protocol parameters

instruction	AT+SOCK=<SockID, " base " >
Function	Set/query network protocol parameter format
send (query)	AT+SOCK=<SockID, " base " ? >
return(query)	<CR><LF>+OK=<SockID,"base",sw , workMode,sockType,DesIP,desPort, data ReportMode ><CR><LF>
send (settings)	AT+SOCK=<SockID,"base", sw, workMode, sockType, DesIP, desPort, data ReportMode ><CR><LF>
return(set)	<CR><LF>+OK<CR><LF>
Remark	<p>SockID, socket number: 0 , sock configuration number value range (0-5), please note here that the 4/5 road is the link between the device and the EBYTE cloud, the user does not need to change, you can set the switch, query parameters, etc., if not Be careful, it can be restored by factory reset.</p> <p>"base", keyword</p> <p>Sw, link switch: 0 (off), 1 (on)</p> <p>Workmode, working mode: 0 (transparent), 1 (MQTT), 2 (HTTP)</p> <p>Sock type , working protocol: 0 (UDPC), 1 (TCPC), 2 (UDPS), 3 (TCPS)</p> <p>DesIP, target IP, maximum length 64, support domain name resolution</p> <p>DesPort, destination port, 0~65535</p> <p>data ReportMode , data reporting mode: 0 -modbus to json, 1-Alibaba cloud modbus to json, 2-Ebyte cloud modbus to json, 3-do not report</p>

【Example】

Inquire: Send: A T +SOCK=0, " base " ?\r\n

Received:\r\n+OK=0,"base",0 , 0,1,test.ebyte.com,10687, 0\r\n

set up: Send: A T +SOCK=0,"base",0 , 0,1,test.ebyte.com,10687, 0\r\n

Received:\r\n+OK\r\n

1.14 Query/set link enable

instruction	AT+SOCK=<SockID, " link/sw " >
Function	Query/set link enable
send (query)	AT+SOCK=<SockID, " link/sw " ? >
return(query)	<CR><LF>+OK=< SockID , " link/sw " ,sw ><CR><LF>
send (settings)	AT+SOCK=<SockID, " link/sw " ,sw>
return(set)	<CR><LF>+OK<CR><LF>
Remark	<p>SockID: socket number: 0 , sock configuration number value range (0-5), please note here that the 4/5 road is the link between the device and the EBYTE cloud, the user does not need to change, you can set the switch, query parameters, etc., if not Be careful, it can be restored by factory reset.</p> <p>"link/sw": keyword</p> <p>Sw: link switch: 0 (off), 1 (on)</p>

【Example】

Inquire:

Send: A T +SOCK=0, " link/sw " ?\ r\n

Received:\r\n+OK=0, " link/sw " ,1\r\n

set up:

Send: A T +SOCK=0, " link/sw " ,1\ r\n

Received:\r\n+OK\r\n

1.15 Query/set link reporting mode

instruction	AT+REPMODE=<SockID, mode >
Function	Query/set the mode of link reporting information
send (query)	AT+REPMODE=SockID?
return(query)	<CR><LF>+OK= mode <CR><LF>
send (settings)	AT+REPMODE=<SockID, mode >
return(set)	<CR><LF>+OK<CR><LF>
Remark	<p>SockID, socket number: 0 , sock configuration number value range (0-5), please note here that the 4/5 road is the link between the device and the EBYTE cloud, the user does not need to change, you can set the switch, query parameters, etc., if not Be careful, it can be restored by factory reset.</p> <p>"link/sw", keyword</p> <p>mode , reporting mode 0 (modbus-json is not currently supported), 1 (Aliyun reporting mode), 2 (Ebyte cloud reporting mode), 3 (not reporting), the default Ebyte cloud mode reporting</p>

【Example】

Inquire:

Send: A T + REPMODE =0?\ r\n

Received:\r\n+OK= 2 \r\n

set up:

Send: A T + REPMODE =0, 2 \ r\n

Received:\r\n+OK\r\n

1.16 Query/set network heartbeat parameters

instruction	AT+SOCK=<SockID, " keep/alive " >
Function	Set/query network heartbeat packet format
send (query)	AT+SOCK=<SockID, " keep/alive " ? >
return(query)	<CR><LF>+OK=<SockID,"keep/alive",time,info_type,data,data_En, SSID_En, MAC_En,CSQ_En,FW_En><CR><LF>
send (settings)	AT+SOCK=<SockID,"keep/alive",time,info_type,data,data_En, SSID_En, MAC_En,CSQ_En,FW_En><CR><LF>
return(set)	<CR><LF>+OK<CR><LF>
Remark	<p>SockID, socket number , sock configuration number value range (0-5), please note here that the 4/5 road is the link between the device and the EBYTE cloud, the user does not need to change, you can set the switch, query parameters, etc., if you accidentally change It can be restored by factory reset.</p> <p>"keep/alive", keyword</p> <p>Time, heartbeat period , value range 0-65535, unit second</p> <p>info_type, data type, 0 means ascii, 1 means hex</p> <p>Data, custom data , maximum length 64</p> <p>data_En, user -defined data enable : 1 is on, 0 is off</p> <p>SSID_En, WIFI SSID enable : 1 open 0 close</p> <p>MAC_En, MAC enable : 1 open 0 close</p> <p>CSQ_En, CSQ enable : 1 open 0 close</p> <p>FW_En, FW enable : 1 open 0 close</p>

1.17 Query/set network registration package parameters

instruction	AT+SOCK=<SockID, " regist " >
Function	Set/query the parameter format of the network registration package
send (query)	AT+SOCK=<SockID, " regist " ? >
return(query)	<CR><LF>+OK=<SockID,"regist",sw,info_type,data,data_En, SSID_En, MAC_En,CSQ_En,FW_En><CR><LF>
send (settings)	AT+SOCK=<SockID,"regist", sw, info_type, data, data_En, SSID_En, MAC_En, CSQ_En, FW_En><CR><LF>
return(set)	<CR><LF>+OK<CR><LF>
Remark	<p>SockID, socket number</p> <p>"regist", keyword</p> <p>sw, 1 open 0 close</p> <p>info_type, data type, 0 means ascii, 1 means hex</p> <p>Data, custom data , maximum length 64</p> <p>data_En, user -defined data enable : 1 is on, 0 is off</p> <p>SSID_En, WIFI SSID enable : 1 open 0 close</p> <p>MAC_En, MAC enable : 1 open 0 close</p>

	CSQ_En, CSQ enable : 1 open 0 close FW_En, FW enable : 1 open 0 close
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1.18 Query link status

instruction	AT+SOCK=<SockID, " link/status " ? >
Function	Query link status
send	AT+SOCK=<SockID, " link/status " ? > <CR><LF>
return	<CR><LF>+OK=<SockID , " link/status " ,status ><CR><LF>
Remark	SockID, socket number: 0 , sock configuration number value range (0-5), please note here that the 4/5 road is the link for the device to connect to the EBYTE cloud, and users generally do not need to pay attention. "link/status", keyword status, link status: 0 (disconnected), 1 (connected), 2 (connected successfully)

【Example】

Inquire:

Send: A T+ SOCK=0, " link/status " ?\ r\n

Received:\r\n+OK=0,"link/status",0\r\n

1.19 Query/set MQTT connection information

instruction	AT+SOCK=<SockID," mqtt/connet ">
Function	Query/set MQTT connection information
send (query)	AT+SOCK=<SockID,"mqtt/connet" ? >
return(query)	<CR><LF>+OK= <sockID,"mqtt/connet" ,sw ,mode,productKey,deviceName,deviceSecret> <CR><LF>
send (settings)	AT+SOCK= <sockID,"mqtt/connet" ,sw ,mode,productKey,deviceName,deviceSecret> <CR><LF>
return(set)	<CR><LF>+OK<CR><LF>
Remark	SockID, socket number: 0 , sock configuration number value range (0-5), please note here that the 4/5 road is the link between the device and the EBYTE cloud, the user does not need to change, you can set the switch, query parameters, etc., if not Be careful, it can be restored by factory reset. "mqtt/connet", keyword Sw: mqtt switch Mode, cloud platform: 0 (Alibaba Cloud), 1 (ONENET), 2 (Baidu Cloud) 3 (3.1 standard MQTT) productKey: Ali product key, Baidu device key, ONENET device ID , set the maximum length to 128 deviceName: Ali device name, Baidu user name, ONENET product ID , set the maximum length to 128

	deviceSecret: Ali device key, Baidu password, ONENET authentication information , set the maximum length to 128
--	---

1.20 Query/set subscription topics

instruction	AT+SOCK=<SockID," mqtt/sub ">
Function	Query/set subscription topics
send (query)	AT+SOCK=<SockID," mqtt/sub " ? >
return(query)	<CR><LF>+OK=<sockID,"mqtt/sub",sw,topicName,qos><CR><LF>
send (settings)	AT+SOCK=<sockID,"mqtt/sub",sw,topicName,qos><CR><LF>
return(set)	<CR><LF>+OK<CR><LF>
Remark	SockID, socket number: 0 , sock configuration number value range (0-5), please note here that the 4/5 road is the link between the device and the EBYTE cloud, the user does not need to change, you can set the switch, query parameters, etc., if not Be careful, it can be restored by factory reset. "mqtt/sub", keyword Sw, switch: 0 (off), 1 (on) TopicName, subscription topic , maximum length 128 Qos, class of service, 0, 1, 2

1.21 Query/Set the publication topic

instruction	AT+SOCK=<SockID," mqtt/pub ">
Function	Query/Set the publication topic
send (query)	AT+SOCK=<SockID," mqtt/pub " ? >
return(query)	<CR><LF>+OK=<sockID,"mqtt/pub",sw,topicName,qos><CR><LF>
send (settings)	AT+SOCK=<sockID,"mqtt/pub",sw,topicName,qos><CR><LF>
return(set)	<CR><LF>+OK<CR><LF>
Remark	SockID, socket number: 0 "mqtt/pub", keyword Sw, switch: 0 (off), 1 (on) TopicName, subscription topic , maximum length 128 Qos, class of service, 0, 1, 2

1.22 Query network status

instruction	CREG
Function	Query network status
send	AT+CREG<CR><LF>
return	<CR><LF>+OK=<status><CR><LF>
Remark	Status , 1 (successful connection to WiFi), 0 is failure

1.23 Query/set working mode

instruction	AT+ MODE =< mode >
Function	Query/set the working mode of the device
send (query)	AT+ MODE
return(query)	<CR><LF>+OK=<mode><CR><LF>
send (settings)	AT+ MODE =<mode>
return(set)	<CR><LF>+OK<CR><LF>
Remark	mode indicates the working mode, 0: user mode (will not connect to the Ebyte cloud), 1/2: both represent the use of the Ebyte cloud mode, users can add their own management links, but the Ebyte cloud is always connected (1 is originally not supported by the device cloud networking version, so the effect of setting 1/2 is the same), note that the user can achieve the same effect of closing the ebyte cloud by changing the switch of link 4 (the link number starts from 0 ,1,2,3,4,5)

1.24 Query/set DO parameters

instruction	AT+ DO =< index >
Function	Query/set DO parameters
send (query)	AT+ DO=<index>?
return(query)	<CR><LF>+OK=< index, repmode , period ,status ><CR><LF>
send (settings)	AT+ DO =< index, repmode , period , status>
return(set)	<CR><LF>+OK<CR><LF>
Remark	Index, do channel number , fill in 0/1 repmode , 0 - no report 1 - periodic report 2 - change report 3 - change report + periodic report period , reporting time, can be set from 0 to 65535 (note that the unit of setting is minutes) Status, status control , you can fill in 0/1 to represent setting on/off

1.25 Query/set DI parameters

instruction	AT+ DI =< index >
Function	Query/set DI parameters
send (query)	AT+ DI=<index>?
return(query)	<CR><LF>+OK=< index, repmode , period ,status><CR><LF>
send (settings)	AT+DI=<index, repmode , period >
return(set)	<CR><LF>+OK<CR><LF>
Remark	Index, d i channel number repmode , 0 - no report 1 - periodic report 2 - change report 3 - change report + periodic report period , reporting time, value range (0-65535), note that the unit is minutes Status, status control

1.26 Query/set AI channel parameters

instruction	AT+ AI =< index >
Function	Query/set channel AI parameters
send (query)	AT+ AI=<index>?
return(query)	<CR><LF>+OK=<index, repmode , period,range,point, mathup.mathdown, value ><CR><LF>
send (settings)	AT+AI=< index, repmode , period, range, point, mathup.mathdown >
return(set)	<CR><LF>+OK<CR><LF>
Remark	index, ai channel number repmode , 0 - no report 1 - periodic report 2 - change report 3 - change report + periodic report period , reporting time, value range (0-65535), note that the unit is minutes range, range of change , value range (0-65535) point , the number of decimal places , the value range is 0-4 mathup , uplink formula , maximum length 24 mathdown , downlink calculation formula , the maximum length is 24

1.27 Query/set linkage parameters

instruction	AT+CORRELATE=<index>
Function	Set/query linkage parameters
send (query)	AT+CORRELATE=<index>?
return(query)	<CR><LF>+OK=< index, sw, sn, s_type, s_ioNum, condition, max, min,

	a_type, a_ioNum, method><CR><LF>
send (settings)	AT+ CORRELATE =< index, sw, sn, s_type, s_ioNum, condition, max, min, a_type, a_ioNum, method><CR><LF>
return(set)	<CR><LF>+OK<CR><LF>
Remark	<p>index, the number of linkage channels , up to 10 linkage channels are supported, please note that the labels are 0-9, starting from 0</p> <p>sw, linkage switch 1 open 0 close</p> <p>sn, linkage source sn , since this machine does not support device networking, this parameter is useless</p> <p>s_type, 0:DI , 1: DO , 2 :AI , 3: AO</p> <p>s_ioNum, IO number</p> <p>condition, trigger condition: 0- off, 1- on, 2-greater than max , 3 less than min , 4-maxmin</p> <p>max, AI/AO threshold max , this device only has AI, note that this value is converted according to the AI uplink formula, if there is no uplink formula conversion, it is the original value of 4-20ma</p> <p>min, AI/AO threshold min , this device only has AI, note that this value is the value converted according to the AI uplink formula, if there is no uplink formula conversion, it is the original value of 4-20ma</p> <p>a_type, 0:DO</p> <p>a_ioNum, IO number</p> <p>method, execution method: 0- off 1- on 2-forward follow 3-reverse follow 4-AO follow</p>

1.28 Query/set MODBUS slave address

instruction	AT+MB_SLAVE_ADDR
Function	Set/query APN parameters
send (query)	AT+MB_SLAVE_ADDR
return(query)	<CR><LF>+OK=<addr><CR><LF>
send (settings)	AT+ MB_SLAVE_ADDR =<addr><CR><LF>
return(set)	<CR><LF>+OK<CR><LF>
Remark	<p>Addr: modbus slave address , you can set 0-247, note that 0 is generally used for broadcast address, so it is not recommended to set it to 0</p>

1.29 Query/set edge collection data points

instruction	AT+ COLLECTER =< data ID, " m2json " >
Function	Set/query network protocol parameter format
send (query)	AT+ COLLECTER =< data ID, " m2json " ? >
return(query)	<CR><LF>+OK=< data ID," m2json ",sw ,name , address , reghead , regaddr , datatype,repmode,period,range,point,mathup,mathdown,readtype ><CR><LF>
send (settings)	AT+SOCK=< data ID," m2json ",sw ,name , address , reghead , regaddr , datatype,repmode,period,range,point,mathup,mathdown,readtype ><CR><LF>
return(set)	<CR><LF>+OK<CR><LF>
Remark	<p>dataID, data point ID, the device supports a maximum of 30 edge collection data points</p> <p>" m2json " , keyword</p> <p>sw, data point switch: 0 (off), 1 (on)</p> <p>name, data point name: equivalent to the key of the key-value pair when reporting</p> <p>Address, modbus slave address: 0-247</p> <p>Reghead, modbus register type: 0-coil 1-discrete 2-hold register 3-input register</p> <p>Regaddr, modbus register address</p> <p>Datatype, the data type of:</p> <p>0 means 1 bit</p> <p>1 means 16-bit signed</p> <p>2 means 16-bit unsigned</p> <p>3 means 32-bit signed ABCD</p> <p>4 means 32-bit signed CDAB</p> <p>5 means 32-bit unsigned ABCD</p> <p>6 means 32-bit unsigned CDAB</p> <p>7 means 32-bit floating point ABCD</p> <p>8 means 32-bit floating point CDAB</p> <p>Repmode, report mode: 0-no report 1- period report 2- change report 3-change report+period report</p> <p>Period, reporting time: in minutes, default 1, fill in 0-65535, note that the unit is minutes</p> <p>Range, change range: platform side data</p> <p>Point, decimal places, fill in 0-4</p> <p>Mathup, uplink formula: +=* / operation, maximum length 24 bits</p> <p>Mathdown, downlink formula: +=* / operation, maximum length 24 bits</p> <p>Readtype, read-write attribute: 0-read-only 1-read-write 2-write-only</p>

Revision History

Version	revision date	Revision Notes	v'vd
1.0	2022-07-06	initial version	Xiao

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