



**【AT Instruction Set】**  
**E90-DTU(XXXSLXX-ETH)\_V2.0**

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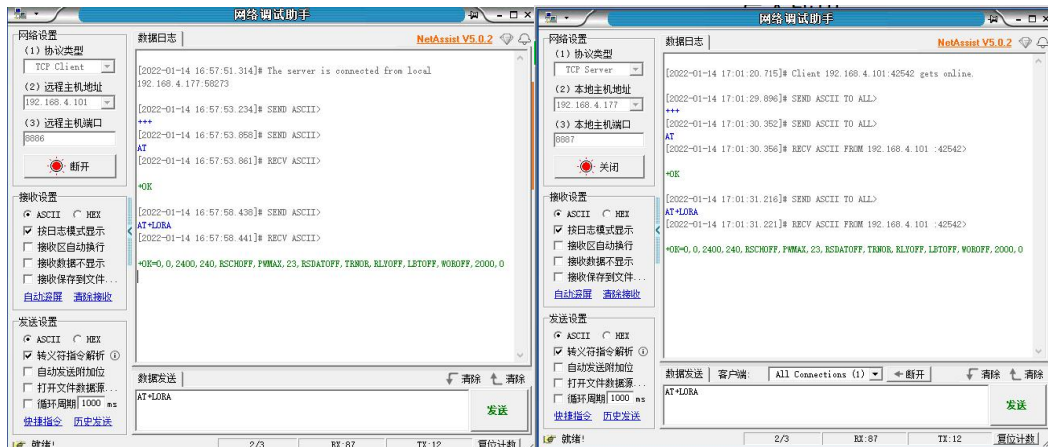
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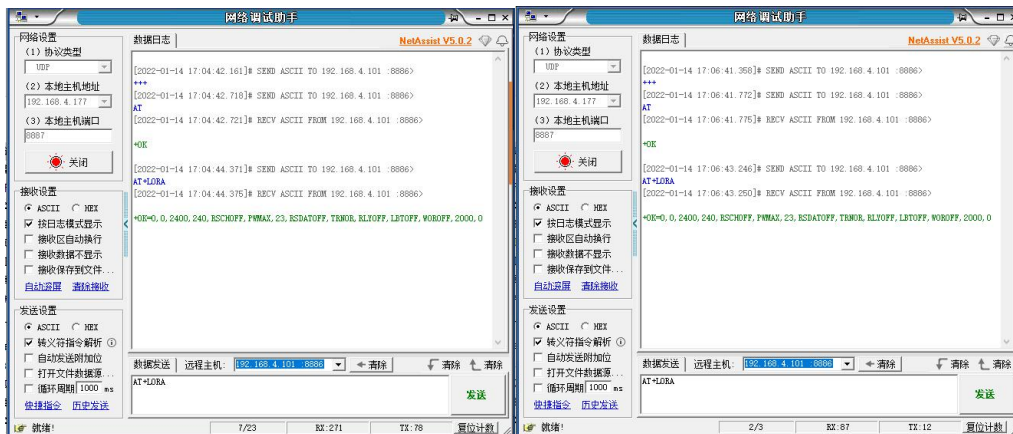
# 1. "Basic function" AT command set

Instructions for use of E90-DTU (xxxSLxx-ETH) instruction manual:

1. Enter the AT command mode: the serial port sends +++ , send AT again within 3 seconds, and the device returns +OK , then enter the AT command mode;
2. This instruction manual supports E90-DTU(230SL22-ETH)\_V2.0, E90-DTU(230SL30-ETH)\_V2.0, E90-DTU(400SL22-ETH)\_V2.0, E90-DTU(400SL30-ETH)\_V2.0, E90-DTU(900SL22-ETH)\_V2.0, E90-DTU(900SL30-ETH)\_V2.0 and other E90 gateways;
3. In the following text, "<CR><LF>" and "\r\n" represent line breaks in different text formats, which are actually HEX (0x0D and 0x0A);
4. Support network AT command configuration, which can realize network AT configuration through TCP/UDP transparent transmission mode, please do not use AT configuration in Modbus gateway mode.
5. TCP server/TCP client use:



## 6. UDP Server/UDP Client Use:



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 Summary of Basic Configuration Instructions

Command	Illustrate
AT+EXAT	Exit AT configuration mode
AT+MODEL	Device model
AT+NAME	device name
AT+SN	Device ID
AT+REBT	Reboot device
AT+RESTORE	Reset
AT+VER	Query firmware version
AT+UART	Serial port parameters
AT+MAC	Device MAC address
AT+LORA	Wireless parameters of the machine
AT+REMOLORA	Configure remote wireless parameters
AT+WAN	Device network parameters
AT+LPORT	Device port
AT+SOCK	Working mode and target network parameters
AT+LINKSTA	Connection status feedback
AT+UARTCLR	Connect serial port cache mode
AT+REGMOD	Registration Package Mode
AT+REGINFO	Registration Package Contents
AT+HEARTMOD	Heartbeat Packet Mode
AT+HEARTINFO	Heartbeat package content
AT+SHORTM	Short connection
AT+TMORST	Timeout restart
AT+TMOLINK	Restart after disconnection
AT+WEBCFGPORT	Web configuration port

## 1.2 Enter AT Command

Command	AT
Function	Enter AT command mode
Send	AT
Return	<CR><LF>+OK<CR><LF>/<CR><LF>+OK=AT enable<CR><LF>
Remark	Returns when there is no connection and configuration: +OK=AT enable Return when there is a connection: +OK

### 【Example】

Send +++ first without newline

No line break is required when sending AT

Received \r\n+OK\r\n 或 \r\n+OK=AT enable\r\n

## 1.3 Exit AT Command

Command	AT+EXAT
Function	Enter AT command mode
Send	AT+EXAT<CR><LF>
Return	<CR><LF>+OK<CR><LF>

### 【Example】

Send: AT+EXAT\r\n

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

Wait for the device to restart.

## 1.4 Query Model

Command	AT+MODEL
Function	Query Model
Send	AT+MODEL<CR><LF>
Return	<CR><LF>+OK=<Model String><CR><LF>
Remark	Modelstring:NA111 NA111-A NA112 NA112-A NS1 NT1 NT1-B

**【Example】**

Send: AT+MODEL\r\n

Received: \r\n +OK=NA111-A\r\n

## 1.5 Query/Set Name

Command	AT+NAME
Function	Query, Set name
Send (Query)	AT+NAME<CR><LF>
Return (Query)	<CR><LF>+OK=<Name String><CR><LF>
Send (Set)	AT+NAME=<Name String><CR><LF> (Limit 10 Bytes)
Return (Set)	<CR><LF>+OK<CR><LF>

**【Example】**

Inquire:

Send: AT+NAME\r\n

Received: \r\n +OK=A0001\r\n

Set up:

Send: AT+NAME=001\r\n

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

## 1.6 Query/Set ID

Command	AT+SN
Function	Query, SetID
Send (Query)	AT+SN<CR><LF>
Return (Query)	<CR><LF>+OK=<SN String><CR><LF>
Send (Set)	AT+SN=<SN String><CR><LF> (Limit 24 Bytes)
Return (Set)	<CR><LF>+OK<CR><LF>

**【Example】**

Inquire:

Send: AT+SN\r\n

Received: \r\n +OK=0001\r\n

Set up:

Send: AT+SN=111\r\n

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

## 1.7 Reboot

Command	AT+REBT
Function	Reboot
Send	AT+REBT<CR><LF>
Return	<CR><LF>+OK<CR><LF>

### 【Example】

Send: AT+REBT\r\n

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

Wait for the restart to complete.

## 1.8 Reset

Command	AT+RESTORE
Function	Reset
Send	AT+RESTORE<CR><LF>
Return	<CR><LF>+OK<CR><LF>

### 【Example】

Send: AT+RESTORE\r\n

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

Wait for the Reset to complete.

## 1.9 Query version Information

Command	AT+VER
Function	Query version information
Send	AT+VER<CR><LF>
Return	<CR><LF>+OK<CR><LF>

### 【Example】

Sent: AT+VER\r\n

Received: \r\n +OK =9050-0-xx\r\n

**[Note]** xx represents different versions;

## 1.10 Query MAC Address

Command	AT+MAC
Function	Query MAC Address
Send	AT+MAC<CR>



Return	<CR><LF>+OK=<MAC><CR><LF>
Remarks	Return data format “xx-xx-xx-xx-xx-xx”

**【Example】**

Sent: AT+MAC\r\n

Received: \r\n+OK=84-C2-E4-36-05-A2\r\n

### 1.11 Query/Set Native LORA Parameters

Command	LORA
Function	Configure native lora parameters
Send (Query)	AT+LORA<CR><LF>
Return (Query)	<CR><LF>+OK=<ADDR><NETID><AIR_BAUD><PACK_LENGTH><RSSI_EN> <TX_POW><CH><RSSI_DATA><TR_MOD><RELAY><LBT><WOR><WOR_TIM> <CRYPT><CR><LF>
Send (Set)	AT+LORA=<ADDR><NETID><AIR_BAUD><PACK_LENGTH><RSSI_EN> <TX_POW><CH><RSSI_DATA><TR_MOD><RELAY><LBT><WOR><WOR_TIM> <CRYPT><CR><LF>
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	<ol style="list-style-type: none"> <li>1. ADDR(local address):0-65535</li> <li>2. NETID(Network ID):0-255</li> <li>3. AIR_BAUD(Air data rate): 300,600,1200,2400,4800,9600,19200 (230SL) 300,1200,2400,4800,9600,19200,38400,62500 (400SL/900SL)</li> <li>4. PACK_LENGTH(Packet length):240, 128, 64, 32</li> <li>5. RSSI_EN(Ambient Noise Enable) Close:RSCHOFF, Open:RSCHON</li> <li>6. TX_POW(Transmit power) High:PWMAX, Middle:PWMID, Low:PWLOW, Very Low:PWMIN</li> <li>7. CH(Channel):0-64(230SL), 0-83(400SL), 0-80(900SL)</li> <li>8. RSSI_DATA(Data Noise Enable) Close:RSDATOFF, Open:RSDATON</li> <li>9. TR_MOD(transfer method) Transparent transmission:TRNOR, fixed point transmission:TRFIX</li> <li>10. RELAY(Relay function) relay closed:RLYOFF, relay open:RLYON</li> <li>11. LBT(LBT Enable) Close:LBTOFF, Open:LBTON</li> <li>12. WOR(WORMode) WOR receiver:WORRX, WOR sender:WORTX, CloseWOR:WOROFF</li> <li>13. WOR_TIM(WOR period, unit ms) 500, 1000, 1500, 2000, 2500, 3000, 3500, 4000</li> <li>14. CRYPT communication key:0-65535</li> </ol>

**【Example】**

Query:

Send: AT+LORA\r\n

Received:

\r\n+OK=0,0,2400,240,RSCHOFF,PWMAX,23,RSDATOFF,TRNOR,RLYOFF,LBTOFF,WOROFF,2000,0\r\n

Set Up:

Send:

AT+LORA=0,0,2400,240,RSCHOFF,PWMAX,23,RSDATOFF,TRNOR,RLYOFF,LBTOFF,WOROFF,2000,0\r\n

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

## 1.12 Set Remote LORA Parameters

Command	LORA
Function	Configure native lora parameters
Send (Set Up)	AT+REMOLORA=<ADDR><NETID><AIR_BAUD><PACK_LENGTH><RSSI_EN> <TX_POW><CH><RSSI_DATA><TR_MOD><RELAY><LBT><WOR><WOR_TIM> <CRYPT><CR><LF>
Return (Set Up)	<CR><LF>+OK<CR><LF>
Remarks	<ol style="list-style-type: none"> <li>ADDR(Local Address):0-65535</li> <li>NETID(Network ID):0-255</li> <li>BAUD(Baud rate): 1200,2400,4800,9600,19200,38400,57600,115200 PARITY(Data bits, parity bits, stop bits) 8N1, 8O1, 8E1</li> <li>AIR_BAUD(Air data rate): 300,600,1200,2400,4800,9600,19200 (230SL) 300,1200,2400,4800,9600,19200,38400,62500 (400SL/900SL)</li> <li>PACK_LENGTH(Packet length):240, 128, 64, 32</li> <li>RSSI_EN(Ambient Noise Enable): Close:RSCHOFF, Open:RSCHON</li> <li>TX_POW(Transmit power) High:PWMAX, Middle:PWMID, Low:PWLOW, Lower:PWMIN</li> <li>CH(Channel):0-64(230SL), 0-83(400SL), 0-80(900SL)</li> <li>RSSI_DATA(Data Noise Enable): Close:RSDATOFF, Open:RSDATON</li> <li>TR_MOD(transfer method): Transparent transmission:TRNOR, fixed point transmission:TRFIX</li> <li>RELAY(Relay function): relay closed:RLYOFF, relay open:RLYON</li> <li>LBT(LBT Enable): Close:LBTOFF, Open:LBTON</li> <li>WOR(WOR Mode): WOR Receiver:WORRX, WOR Sender:WORTX, Close WOR:WOROFF</li> <li>WOR_TIM(WOR Cycle,Unit ms): 500, 1000, 1500, 2000, 2500, 3000, 3500, 4000</li> <li>CRYPT communication key:0-65535</li> </ol>

[Note]: The remote configuration must be connected with transparent transmission before the configuration is successful, and the lower airspeed configuration and the sub-packet greater than

128Bit can be sent successfully.

**【Example】**

Inquire:

Send: AT+ AT+REMOLORA\r\n

receive:

\r\n+OK=0,0,115200,8N1,2400,240,RSCHOFF,PWMAX,16,RSDATOFF,TRNOR,RLYOFF,LBTOFF,WOROFF,2000,0\r\n

Set Up:

Send:

AT+HTTPREQMODE=0,0,115200,8N1,2400,240,RSCHOFF,PWMAX,16,RSDATOFF,TRNOR,RLYOFF,LBTOFF,WOROFF,2000,0\r\n

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

### 1.13 Query/Set Network Parameters

Command	AT+WAN
Function	Query/set Network Parameters
Send (Query)	AT+WAN<CR><LF>
Return (Query)	<CR><LF>+OK=<Mode, Address, Mask, Gateway, DNS><CR><LF>
Send (Set)	AT+WAN=<Mode, Address, Mask, Gateway, DNS><CR><LF>
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	Mode: DHCP/STATIC Address:Local IP address Mask:subnet mask Gateway:gateway DNS:DNS server

**【Example】**

Inquire:

Send: AT+WAN\r\n

Received: \r\n+OK= STATIC ,192.168.3.7,255.255.255.0,192.168.3.1,114.114.114.114\r\n

Settings: (Dynamic IP)

Send: AT+WAN=DHCP, 192.168.3.7,255.255.255.0,192.168.3.1,114.114.114.114\r\n

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

Settings: (Static IP)

Send: AT+WAN=STATIC,192.168.3.7,255.255.255.0,192.168.3.1,114.114.114.114\r\n

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

### 1.14 Query/Set Local Port Number

Command	AT+LPORT
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Function	Query/Set Local Port Number
Send (Query)	AT+LPORT<CR>
Return (Query)	<CR><LF>+OK=<Value><CR><LF>
Send (Set)	AT+LPORT=<Value><CR>
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	Value (port number): 0-65535,0 (the client mode uses a random port, and the server mode needs to use the "non-0" parameter, otherwise the device server will fail to open);

**【Example】**

Inquire:

Send: AT+LPORT\r\n

Received:\r\n+OK=8887\r\n

set up:

Send: AT+LPORT=8883\r\n

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

## 1.15 Query/set the working mode of the machine and network

### parameters of the target device

Command	AT+SOCK
Send (Query)	Query and set network protocol parameters
Return (Query)	AT+SOCK<CR><LF>
Send (Set)	<CR><LF>+OK=<Model, Remote IP, Remote Port><CR><LF>
Return (Set)	AT+SOCK=<Model, Remote IP, Remote Port><CR><LF>
Remarks	<CR><LF>+OK<CR><LF>
Function	Model (working mode): TCPC, TCPS, UDPC, UDPS, MQTTC, HTTPC; Remote IP (target IP/domain name): a maximum of 128-character domain name can be configured; Remote Port: 1-65535;

**【Example】**

Inquire:

Send: AT+SOCK\r\n

Received:\r\n+OK=TCPC,192.168.3.3,8888\r\n

set up:

Send: AT+SOCK=TCPC,192.168.3.100,8886\r\n

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

## 1.16 Query Network Link Status

Command	AT+LINKSTA
Function	Query Network link Status
Send	AT+LINKSTA<CR><LF>
Return	<CR><LF>+OK=<STA><CR><LF>
Remarks	STA: Connect/Disconnect

### 【Example】

Send: AT+LINKSTA\r\n

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

## 1.17 Query/Set Serial Port Cache Clearing Status

Command	AT+UARTCLR
Function	Query and set serial port cache clearing status
Send (Query)	AT+UARTCLR<CR><LF>
Return (Query)	<CR><LF>+OK=<STA><CR><LF>
Send (Set)	AT+UARTCLR=<STA><CR><LF>
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	STA: ON (Enable connection to clear cache) OFF (Disable connection clear cache)

### 【Example】

Inquire:

Send: AT+UARTCLR\r\n

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

set up:

Send: AT+UARTCLR=OFF\r\n

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

## 1.18 Query/set Registration Package Mode

Command	AT+REGMOD
Function	Query/set Registration Package Mode
Send (Query)	AT+REGMOD<CR><LF>
Return (Query)	<CR><LF>+OK=<Status><CR><LF>
Send (Set)	AT+REGMOD=<Status><CR><LF>

Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	Status: OFF - Disabled OLMAC - Send MAC on first connection OLCSTM - First Connection Send Custom EMBMAC - send MAC per packet EMBCSTM - Send Per Packet Custom

**【Example】**

Inquire:

Send: AT+REGMOD\r\n

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

set up:

Send: AT+UARTCLR=OLMAC\r\n

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

### 1.19 Query/set custom registration package content

Command	REGINFO
Function	Query/set custom registration package content
Send (Query)	AT+HEARTINFO<CR><LF>
Return (Query)	<CR><LF>+OK=<Mode><Data><CR><LF>
Send (Set)	AT+HEARTINFO=<Mode><Data><CR><LF>
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	Mode: data format (HEX) hexadecimal, (STR) string; Data data: ASCII limit is 40 bytes, HEX limit is 20 bytes;

**【Example】**

Inquire:

Send: AT+REGINFO\r\n

Received:\r\n+OK=STR,regist msg\r\n

set up:

Send: AT+REGINFO=STR,EBTYE TEST\r\n

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

### 1.20 Query/set the heartbeat packet mode

Command	AT+HEARTMOD
Function	Query/set the heartbeat packet mode
Send (Query)	AT+ HEARTMOD<CR><LF>
Return (Query)	<CR><LF>+OK=<Mode><Time><CR><LF>

Send (Set)	AT+HEARTMOD=<Mode><Time><CR><LF>
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	Mode: NONE (closed), UART (serial heartbeat), NET (network heartbeat); Time: time 0-65535s, 0 (close the heartbeat);

**【Example】**

Inquire:

Send: AT+HEARTMOD\r\n

Received:\r\n+OK=NONE,0\r\n

Send: AT+HEARTMOD =NET,50\r\n

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

### 1.21 Query/set heartbeat data

Command	AT+HEARTINFO
Function	Query/set heartbeat data
Send (Query)	AT+HEARTINFO<CR><LF>
Return (Query)	<CR><LF>+OK=<Mode><Data ><CR><LF>
Send (Set)	AT+HEARTINFO=<Mode><Data><CR><LF>
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	Mode: data format (HEX) hexadecimal, (STR) string; Data data: ASCII limit is 40 bytes, HEX limit is 20 bytes;

**【Example】**

Inquire:

Send: AT+HEARTINFO\r\n

Received:\r\n+OK=STR,heart beat msg\r\n

set up:

Send: AT+HEARTINFO=STR,EBTYE HEART TEST\r\n

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

### 1.22 Query/set short connection time

Command	AT+SHORTM
Function	Query/set short connection time
Send (Query)	AT+SHORTM<CR><LF>
Return (Query)	<CR><LF>+OK=<Time><CR><LF>

Send (Set)	AT+SHORTM=<Time><CR><LF>
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	Time: Limit 2-255s, 0 is off;

**【Example】**

Inquire:

Send: AT+SHORTM\r\n

Received:\r\n+OK=0\r\n

set up:

Send: AT+SHORTM=5\r\n

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

## 1.23 Query/set timeout restart time

Command	AT+TMORST
Function	Query/set timeout restart time
Send (Query)	AT+TMORST<CR><LF>
Return (Query)	<CR><LF>+OK=<Time><CR><LF>
Send (Set)	AT+TMORST=<Time><CR><LF> (限制 60-65535s, 0 为关闭)
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	Time: Limit 2-255s, 0 is off;

**【Example】**

Inquire:

Send: AT+TMORST\r\n

Received:\r\n+OK=300\r\n

set up:

Send: AT+SHORTM=350\r\n

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

## 1.24 Query/set the time and times of disconnection and reconnection

Command	AT+TMOLINK
Function	Query/set the time and times of disconnection and reconnection
Send (Query)	AT+TMOLINK<CR><LF>
Return (Query)	<CR><LF>+OK=<Times, Num><CR><LF>



Send (Set)	AT+TMOLINK=<Times, Num><CR><LF>
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	Times (disconnection and reconnection time): limit 1-255, 0 is closed; Num (times of disconnection and reconnection): limit 1-60 times;

**【Example】**

Inquire:

Send: AT+TMOLINK\r\n

Received:\r\n+OK=5,5\r\n

set up:

Send: AT+TMOLINK=10,10\r\n

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

## 1.25 Web Configuration Port

Command	AT+WEBCFGPORT
Function	Query and set web configuration port
Send (Query)	AT+WEBCFGPORT<CR><LF>
Return (Query)	<CR><LF>+OK=<PORT><CR><LF>
Send (Set)	AT+TMOLINK=<PORT><CR><LF>
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	PORT: 2-65535

**【Example】**

Inquire:

Send: AT+WEBCFGPORT\r\n

Received:\r\n+OK=80\r\n

set up:

Send: AT+WEBCFGPORT=80\r\n

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

## 2. "Modbus function" AT command set

### 2.1 Summary of "Modbus Function" Commands

Command	Description
AT+MODWKMOD	Modbus mode
AT+MODPTCL	Protocol conversion
AT+MODGTWYTM	Storage Gateway Instruction Storage Time and Query Interval
AT+MODCMDEDIT	Modbus RTU command pre-stored

### 2.2 Query Modbus working mode and command timeout time

Command	AT+MODWKMOD
Function	Query and set Modbus working mode
Send (Query)	AT+MODWKMOD<CR><LF>
Return (Query)	<CR><LF>+OK=<Mode><Timeout><CR><LF>
Remarks	Mode: NONE (disables MODBUS) SIMPL (Simple Protocol Conversion) MULIT (Multi-Master Mode) STORE (Storage Gateway) CONFIG (Configurable Gateway) AUTOUP (active upload mode) Timeout:0-65535;

Inquire:

Send: AT+MODWKMOD\r\n

Received:\r\n+OK=SIMPL,100\r\n

set up:

Send: AT+MODWKMOD=MULIT,1000\r\n

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

### 2.3 Enable Modbus TCP to Modbus RTU protocol conversion

Command	AT+MODPTCL
Function	Query and set protocol conversion (Modbus TCP<=>Modbus RTU)
Send (Query)	AT+MODPTCL<CR><LF>
Return (Query)	<CR><LF>+OK=<Mode><CR><LF>
Remarks	Mode: ON(Enable protocol conversion) OFF(Disable protocol conversion)

Inquire:  
 Send: AT+MODPTCL\r\n  
 Received:\r\n+OK=ON\r\n  
 set up:  
 Send: AT+MODPTCL=ON\r\n  
 Received:\r\n+OK\r\n

## 2.4 Set Modbus gateway command storage time and automatic query interval

Command	AT+MODGTWYTM
Function	Query and configure Modbus gateway command storage time and automatic query interval
Send (Query)	AT+MODGTWYTM<CR><LF>
Return (Query)	<CR><LF>+OK=<Time1><Time2><CR><LF>
Remarks	Time1: Instruction storage time (1-255 seconds) Time2: Automatic query interval time (1-65535 milliseconds)

Inquire:  
 Send: AT+MODGTWYTM\r\n  
 Received:\r\n+OK=10,200\r\n  
 set up:  
 Send: AT+MODGTWYTM=5,100\r\n  
 Received:\r\n+OK\r\n

## 2.5 Query and edit of pre-stored commands of Modbus configuration gateway

Command	AT+MODCMDEDIT
Function	Query and edit of pre-stored commands of Modbus configuration gateway
Send (Query)	AT+MODCMDEDIT<CR><LF>
Return (Query)	<CR><LF>+OK=<Mode><CMD><CR><LF>
Remarks	Mode: ADD add command; DEL delete instruction; CLR clear command; CMD: Modbus command (only supports standard Modbus RTU command, no need to fill in the verification, only the function code of read command 01, 02, 03, 04 can be configured), cannot store the same command and return +ERR=-4;

Inquire:  
 Send: AT+MODCMDEDIT\r\n

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

1: 02 03 00 00 00 02\r\n

2: 01 03 00 05 00 00\r\n

set up:

Send: AT+MODCMDEDIT=ADD,0103000A0003\r\n(Add command)

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

Send: AT+MODCMDEDIT=DEL,0103000A0003\r\n(Delete command)

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

Send: AT+MODCMDEDIT=CLR,0103000A0003\r\n(Clear command)

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

### 3. "Internet of Things" AT command set

#### 3.1 Summary of "IoT Capabilities" Directives

Command	Description
AT+HTPREQMODE	HTTP request method
AT+HTPURL	HTTP URL path
AT+HTPHEAD	HTTP headers
AT+MQTTCLOUD	MQTT platform
AT+MQTKPALIVE	MQTT heartbeat keep-alive period
AT+MQTDEVID	MQTT Client ID
AT+MQTUSER	MQTT User Name
AT+MQTPASS	MQTT Password
AT+MQTTPRDKEY	Alibaba Cloud Product Key
AT+MQTSUB	MQTT subscription topic
AT+MQTPUB	MQTT publish topic

#### 3.2 MQTT and HTTP target IP or domain name configuration

Refer to "Query/Set the Working Mode of the Machine and the Network Parameters of the Target Device".

Set the MQTT mode and target parameters:

Send: AT+SOCK=MQTTC, mqtt.heclouds.com,6002\r\n

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

Set the MQTT mode and target parameters:

Send: AT+SOCK=HTTTPC,www.baidu.com,80\r\n

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

#### 3.3 Query/set HTTP request method

Command	AT+HTPREQMODE
Function	Query/set HTTP request method
Send (Query)	AT+HTPREQMODE<CR><LF>
Return (Query)	<CR><LF>+OK=<Method><CR><LF>
Send (Set)	AT+HTPREQMODE=<Method><CR><LF>
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	Method: GET\POST

**【Example】**

Inquire:  
 Send: AT+HTPREQMODE\r\n  
 Received:\r\n+OK=GET\r\n  
 set up:  
 Send: AT+HTPREQMODE=POST\r\n  
 Received:\r\n+OK\r\n

### 3.4 Query/Set HTTP URL Path

Command	AT+HTPURL
Function	Query/Set HTTP URL Path
Send (Query)	AT+HTPURL<CR><LF>
Return (Query)	<CR><LF>+OK=<Path><CR><LF>
Send (Set)	AT+HTPURL=<Path><CR><LF>
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	Path: HTTP request URL resource address (length limit 0-128 characters)

**【Example】**

Inquire:  
 Send: AT+HTPURL\r\n  
 Received: \r\n+OK=/1.php?\r\n  
 set up:  
 Send: AT+HTPURL=/view/ed7e65a90408763231126edb6f1aff00bfd57061.html\r\n  
 Received:\r\n+OK\r\n

### 3.5 Query/Set HTTP headers

Command	AT+HTPHEAD
Function	Query/Set HTTP headers
Send (Query)	AT+HTPHEAD<CR><LF>
Return (Query)	<CR><LF>+OK=<Para>,<Head><CR><LF>
Send (Set)	AT+HTPHEAD=<Para>,<Head><CR><LF>
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	Para (HTTP returns serial port data with header): DEL: without header; ADD: with Baotou; Head (HTTP request header): length limit 128 characters;

**【Example】**

Inquire:

Send: AT+HTPHEAD\r\n  
 Received:\r\n+OK=DEL,User-Agent: Mozilla/5.0\r\n  
 set up:  
 Send: AT+HTPHEAD=ADD, Host:www.ebyte.com\r\n  
 Received:\r\n+OK\r\n

### 3.6 Query/Set MQTT target platform

Command	AT+MQTTCLOUD
Function	Query/Set MQTT target platform
Send (Query)	AT+MQTTCLOUD<CR><LF>
Return (Query)	<CR><LF>+OK=<Server><CR><LF>
Send (Set)	AT+MQTTCLOUD=<Server><CR><LF>
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	Server (MQTT target platform): STANDARD (MQTT3.1.1 standard protocol server) ONENET (OneNET-MQTT server) ALI (Alibaba Cloud MQTT server) BAIDU (Baidu Cloud MQTT Server) HUAWEI (Huawei Cloud MQTT Server)

**【Example】**

Inquire:  
 Send: AT+MQTTCLOUD\r\n  
 Received:\r\n+OK=STANDARD\r\n  
 set up:  
 Send: AT+MQTTCLOUD=BAIDU\r\n  
 Received:\r\n+OK\r\n

### 3.7 Query/set MQTT keep-alive heartbeat packet sending cycle

Command	AT+MQTKPALIVE
Function	Query/set MQTT keep-alive heartbeat packet sending cycle
Send (Query)	AT+MQTKPALIVE<CR><LF>
Return (Query)	<CR><LF>+OK=<Time><CR><LF>
Send (Set)	AT+MQTKPALIVE=<Time><CR><LF>
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	Time: MQTT keep-alive heartbeat time (limit 1-255 seconds, default 60s, it is not recommended to modify);

**【Example】**

Inquire:

Send: AT+MQTKPALIVE\r\n  
 Received:\r\n+OK=60\r\n  
 set up:  
 Send: AT+MQTKPALIVE=30\r\n  
 Received:\r\n+OK\r\n

### 3.8 Query/set MQTT Device Name (Client ID)

Command	AT+MQTDEVID
Function	Query/set MQTT Device Name (Client ID)
Send (Query)	AT+MQTDEVID<CR><LF>
Return (Query)	<CR><LF>+OK=<Client ID><CR><LF>
Send (Set)	AT+MQTDEVID=<Client ID><CR><LF>
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	Client ID: MQTT device name (Client ID) is limited to 128 characters in length;

**【Example】**

Inquire:  
 Send: AT+MQTDEVID\r\n  
 Received: \r\n+OK=test-1\r\n  
 set up:  
 Send: AT+MQTDEVID=6164028686b027ddb5176\_NA111-TEST\r\n  
 Received:\r\n+OK\r\n

### 3.9 Query/Set MQTT Username (User Name/Device Name)

Command	AT+MQTUSER
Function	Query/Set MQTT Username (User Name/ Device Name)
Send (Query)	AT+MQTUSER<CR><LF>
Return (Query)	<CR><LF>+OK=<User Name><CR><LF>
Send (Set)	AT+MQTUSER=<User Name><CR><LF>
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	User Name: MQTT product ID (User Name/ device name) has a limited length of 128 characters;

**【Example】**

Inquire:  
 Send: AT+MQTUSER\r\n  
 Received:\r\n+OK=ebyte-IOT\r\n



set up:  
 Send: AT+MQTUSER=12345678&a1Ofdo5l0\r\n  
 Received:\r\n+OK\r\n

### 3.10 Query/Set MQTT Product Password (MQTT password/Device Secret)

Command	AT+MQTPASS
Function	Query/Set MQTT log in Password (MQTT Password/Device Secret)
Send (Query)	AT+MQTPASS<CR><LF>
Return (Query)	<CR><LF>+OK=<Password><CR><LF>
Send (Set)	AT+MQTPASS=<Password><CR><LF>
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	Password: MQTT login password (MQTT Password/Device Secret) length is limited to 128 characters;

**【Example】**

Inquire:  
 Send: AT+MQTPASS\r\n  
 Received:\r\n+OK=12345678\r\n

set up:  
 Send: AT+MQTPASS=87654321\r\n  
 Received:\r\n+OK\r\n

### 3.11 Query/Set the Product Key of Alibaba Cloud MQTT

Command	AT+MQTTPRDKEY
Function	Query/Set the Product Key of Alibaba Cloud MQTT
Send (Query)	AT+MQTTPRDKEY<CR><LF>
Return (Query)	<CR><LF>+OK=<Product Key><CR><LF>
Send (Set)	AT+MQTTPRDKEY=<Product Key><CR><LF>
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	Product Key: Product Key of Alibaba Cloud (limited to 64 characters)

**【Example】**

Inquire:  
 Send: AT+MQTTPRDKEY\r\n  
 Received:\r\n+OK=user ProductKey\r\n

set up:

Send: AT+MQTTPRDKEY=a1HEeOIqVHU\r\n

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

### 3.12 Query/set MQTT subscription topic

Command	AT+MQTSUB
Function	Query/set MQTT subscription topic
Send (Query)	AT+MQTSUB<CR><LF>
Return (Query)	<CR><LF>+OK=<Qos>,<Topic><CR><LF>
Send (Set)	AT+MQTSUB=<Qos>,<Topic><CR><LF>
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	Qos: only supports level 0, 1; Topic: MQTT subscription topic (limited to 128 characters in length)

**【Example】**

Inquire:

Send: AT+MQTSUB\r\n

Received: \r\n+OK= 0,topic \r\n

set up:

Send: AT+MQTSUB=0,/ggip6zWo8of/NA111-TEST/user/SUB\r\n

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

### 3.13 Query/Set MQTT publish topic

Command	AT+MQTPUB
Function	Query/Set MQTT publish topic
Send (Query)	AT+MQTPUB<CR><LF>
Return (Query)	<CR><LF>+OK=<Qos>,<Topic><CR><LF>
Send (Set)	AT+MQTPUB=<Qos>,<Topic><CR><LF>
Return (Set)	<CR><LF>+OK<CR><LF>
Remarks	Qos: only supports level 0, 1; Topic: MQTT publish topic (limited to 128 characters in length)

**【Example】**

Inquire:

Send: AT+MQTPUB\r\n

Received: \r\n+OK=0,topic \r\n

set up:

Send: AT+MQTPUB= 0,/ggip6zWo8of/NA111-TEST/user/PUB\r\n



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

## 4. AT Configuration Example

### 4.1 Example of connecting to a standard MQTT3.1.1 server

```
{
  Client id:876275396
  mqtt username:485233
  mqtt password:E_DEV01
  mqtt server: mqtt.heclouds.com
  mqtt port:6002
}
```

Restore factory settings before configuration to avoid enabling unused functions.

SEND (+++)

3S内SEND (AT)

RECV(+OK=AT enable)

SEND (AT+RESTORE)

RECV(+OK)

The above steps can use the hardware to restore the factory settings.

Step 1: Enter AT configuration mode;

SEND (+++)

3S内SEND (AT)

RECV(+OK=AT enable)

Step 2: Enable dynamic IP, if you configure the corresponding IP for the local area network

MQTT server, use dynamic IP here;

SEND(AT+WAN=DHCP,192.168.3.7,255.255.255.0,192.168.3.1,114.114.114.114)

RECV(+OK)

Step 3: Configure the working mode and the MQTT server address and port;

SEND(AT+SOCK=MQTTC,mqtt.heclouds.com,6002)

RECV(+OK=And local port has been set to 0)

Step 4: Select the MQTT platform;

SEND(AT+MQTTCLOUD=STANDARD)

RECV(+OK)

Step 5: Configure the Client id of the device;

SEND(AT+MQTDEVID=876275396)

RECV(+OK)

Step 6: Configure the mqtt username of the device;

SEND(AT+MQTUSER=485233)

RECV(+OK)

Step 7: Configure the mqtt password of the device;

SEND(AT+MQTPASS=E\_DEV01)

RECV(+OK)

Step 8: Subscribe to the corresponding topic (Topic);

```
SEND(AT+MQTSUB=0,EBYTE_TEST)
```

```
RCV(+OK)
```

Step 9: Configure the topic used for publishing;

```
SEND(AT+MQTPUB=0,EBYTE_TEST)
```

```
RCV(+OK)
```

Step 10: Restart the device;

```
SEND(AT+REBT)
```

```
RCV(+OK)
```

The final interpretation right belongs to Chengdu Ebyte Electronic Technology Co., Ltd.

## Revision History

Version	Date	Description	Issued by
1.0	2022-01-15	Initial version	LC

## About us

Technical support: [support@cdebyte.com](mailto:support@cdebyte.com)

Documents and RF Setting download link: [www.cdebyte.com/en/](http://www.cdebyte.com/en/)



Tel: +86-28-61399028

Fax: 028-64146160

Web: [www.cdebyte.com/en/](http://www.cdebyte.com/en/)

Address: Innovation Center B333-D347, 4# XI-XIN Road, Chengdu, Sichuan, China