



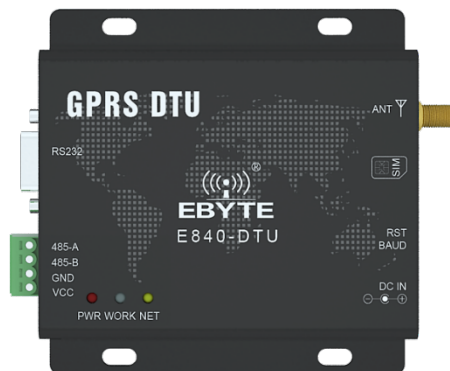
## E840-DTU ( GPRS-01 )

### User Manual



This manual may be modified based on product upgrade, please refer to the latest version.  
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Version	Date	Description	Issued by
1.00	2017/12/6	Initial version	huaa



E840-DTU (GPRS-01) is designed for the communication between UART and net server via GPRS. With easy AT setting, the dual transparent transmission can be conducted.

This chapter focuses on the brief introduction of E840-DTU (GPRS-01). It explains how to make the simplest hardware environment and test the transparent transmission of E840-DTU (GPRS-01). The transparent transmission is between UART devices (referring to PC) and net sever (replaced by TCP testing tools).

## Features

- Quad-frequency: GSM850/900, DCS1800/1900, applied globally
- GSM/GPRS/EDGE and the 2G data of China Unicom and China mobile2G/3G/4G SIM card
- TCP and UDP transmission protocols
- Remote SMS parameter config
- UART AT command setting
- Simple commands are sent in Chinese or English via SMS which avoids the complication of Chinese message of PDU.
- Wide voltage band of 8-28V. Power supply of DC and terminal.
- RS485 circuit board features electric isolation, lightning protection, surge protection and anti-interference.

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# 1. Introduction

## 1.1 Brief Introduction

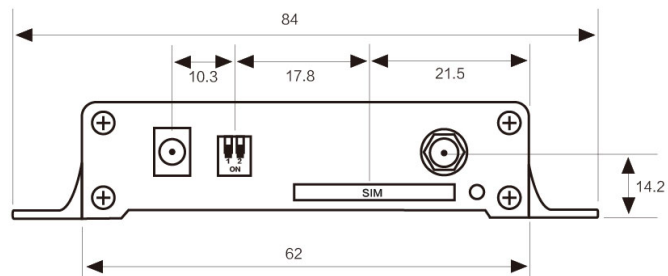
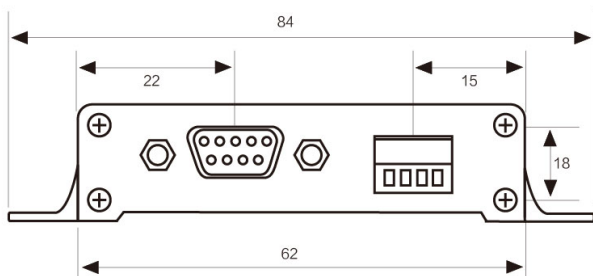
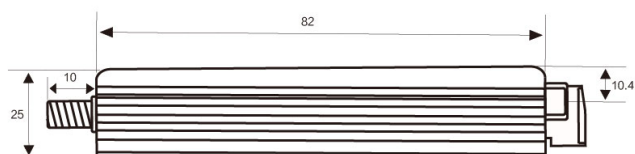
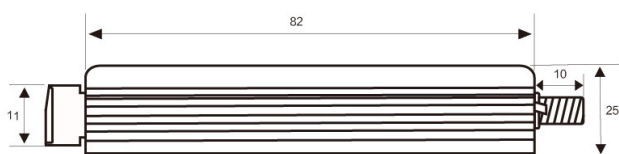
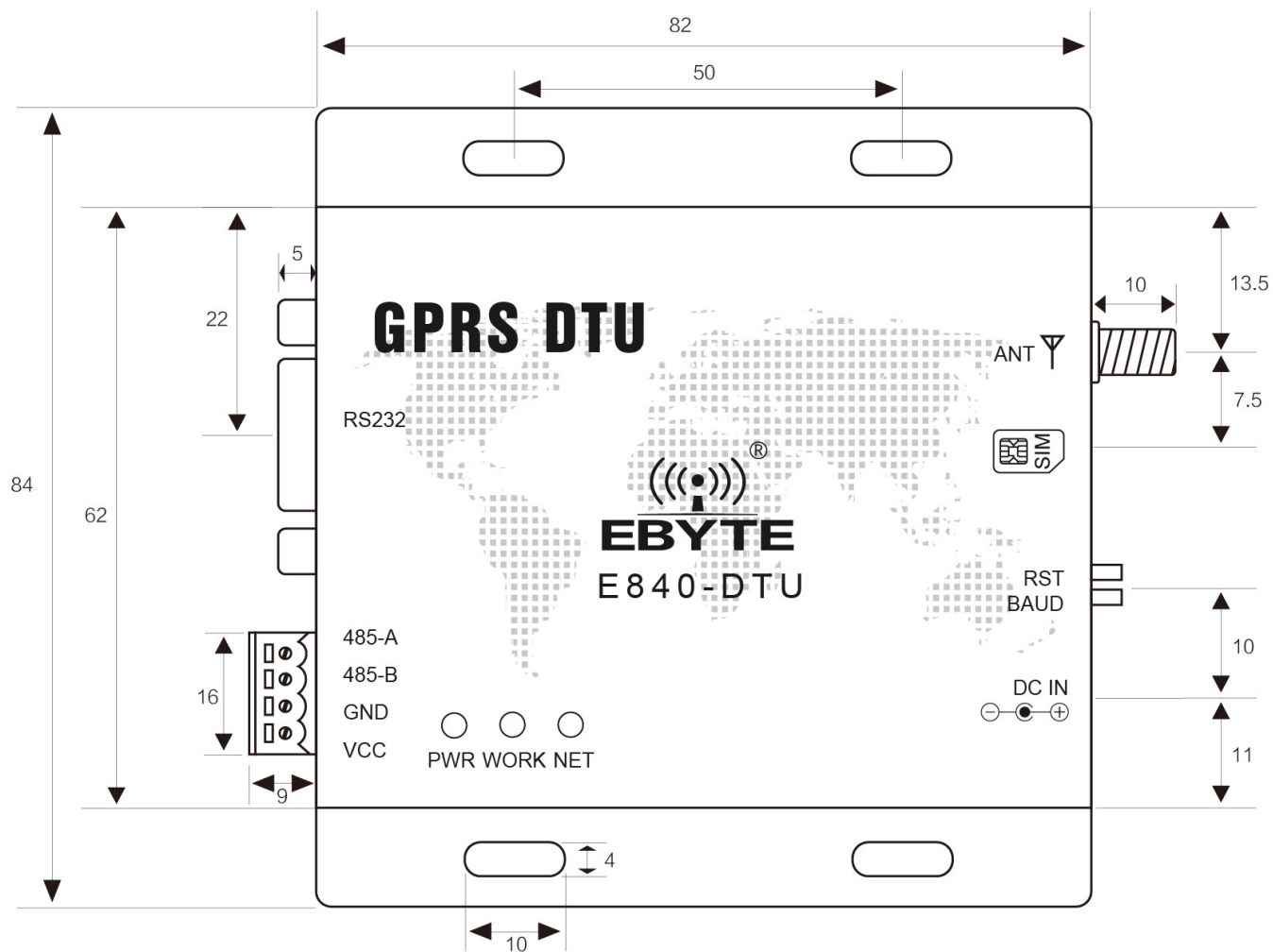
E840-DTU (GPRS-01) is a wireless data transceiver of Ebyte. It features a certain scope of applications which cover most common application scenarios. It supports definable ConnReg and keepalive.

E840-DTU (GPRS-01) supports DC and RS485 terminal power supply. Its voltage ranges from 8.0 to 28.0V. 5.0V works too. RS232 and RS485 apply electric isolation which enables anti-interference. It is applicable in some environment with strong electromagnetic interference like power sector.

## 1.2 Parameters

Item	Value	Description
RF Parameter	Wireless Standard	GSM/GPRS/EDGE
	Standard Frequency	850/900/1800/1900MHz
	Transmission Power	GSM900 class4 (2W) , DCS1800 class1 (1W)
	GPRS Terminal Class Device	Class B
	GPRS Multi-slot Class	GPRS Class 10
	GPRS Coding Schemes	CS1 ~ CS4
Hardware Features	Antenna Interface	SMA
	Data Interface	RS485 /RS232
	Baud Rate	2400bps - 115200bps
	Working Voltage	DC 5V~36V
	Working Current	59mA~65mA(12V)
	Working Temperature	-40C° - 70C°
	Storage Temperature	-40C° - 85C°
	Size	82×84×24mm
	RS485 /RS232	Electric isolation, RS485/RS232
Firmware Features	Wi-Fi	GSM/GPRS/EDGE
	Mode	Transparent Transmission
	Command Setting	Local AT command, remote configuration command
	Net Protocols	TCP /UDP
	Heart Beat Packet	Configurable heart beat cycle and content
	Device ID	Configurable Device ID(ConnReg)
	Configurable Responding Time	Configurable sever responding time
	Configurable Reconnection Gap	Configurable reconnection gap
	DNS	Yes

# 1.3 Interface Description

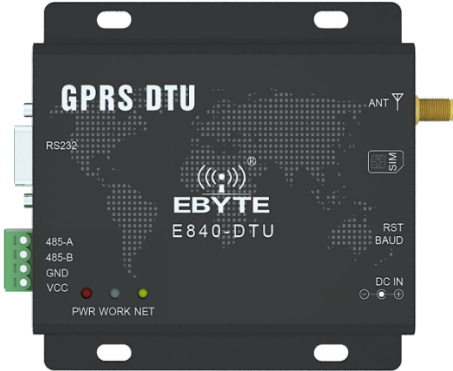





## 1.4 Pin Definition

Pin NO.	Name	Description
1	GND	Ground electrode
2	VCC	Power supply 8V-28V DC
3	RS232	RS232 communication interface
4	485_A	Side A of eternal interface for other RS485 devices
5	485_B	Side A of eternal interface for other RS485 devices
6	ANT	SMA-K, 50Ω
7	PWR	Power indicator
8	WORK	UART communication indicator(different color for transmitting and receiving)
9	NEL	Net working indicator
10	RST	Reset switch(powered off when pulled down)
11	BAUD	UART baud rate reset switch (Reset after pulled down)
12	DC8~28V	Power adaptor interface
13	SIM	SIM card slot

## 2. Test Introduction

### 2.1 Devices Preparation

 <p>The image shows a black rectangular GPRS DTU device. It has a SIM card slot on the right side, an antenna on the top right, and various ports on the left and bottom. The text on the device includes 'GPRS DTU', 'E840-DTU', and 'EBYTE'. There are also labels for 'RS232', '485-A', '485-B', 'GND', 'VCC', 'PWR', 'WORK', 'NET', 'ANT', 'RST', and 'BAUD'.</p>	 <p>The image shows a black power adaptor with a two-prong AC plug and a DC output cable with a barrel jack connector.</p>
<p>E840-DTU (GPRS-01)</p>	<p>12V power adaptor</p>
 <p>The image shows two types of USB adaptors. One is a black USB to RS485 adaptor with a green connector. The other is a black USB to RS232 adaptor with a gold-plated DB9 connector.</p>	 <p>The image shows a GPRS sucker antenna with a black cable and a metal suction cup base.</p>
<p>USB to RS485 adaptor or USB to RS232 adaptor</p>	<p>GPRS sucker antenna</p>

Please get UART, SIM card, sucker antenna and etc. ready according to the recommended circuit before test.

## 2.2 Data Transmitting Test

Software is needed for data transmitting test.

Xcom is applied here for the test and you can download it at our website. Users can also apply other test tools that are available.

### 2.2.1 Test Procedures

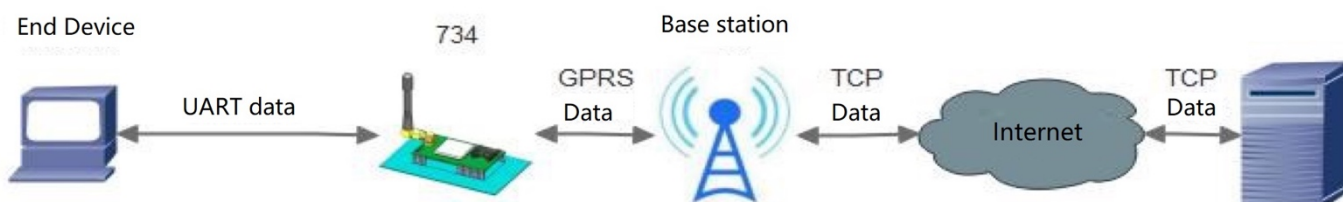
Insert the SIM card into E840-DTU (GPRS-01) and connect it to the computer according to the mentioned methods. Open the Xcom, set the parameters of corresponding UART NO. and baud rate and turn on the UART. (China Telecom SIM card is not compatible.)

When powered on with the power adaptor provided by us, POWER indicator on and NET indicator blinking shows that the transceiver is ready. More details for the indicator, please refer to the following chapters.

Direct access to the module with the UART AT command.

Classic application:

Transparent transmission between DTU and net server



Default parameter of the transceiver is 115200, 8N, 1. Once powered on, the transceiver will output the following message:

```
AT Ready
```

```
AST_POWERON
```

The output indicates that the transceiver is working properly. Users can input the following AT command to configure the parameters.

AT+DSCADDR=0,"TCP","139.199.157.166",8788 //Configure the connection IP address and port of the transceiver. Company IP address and ports are applied, and users can apply their own ones.

```
AT&W //Maintain the parameter
```

```
AT+CFUN=1,1 // Restart
```

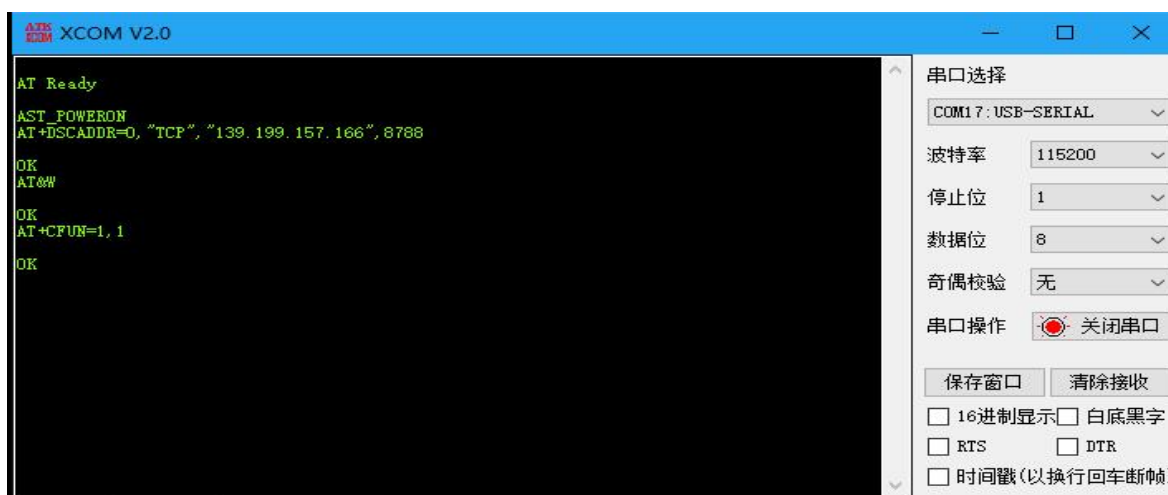
```
AT+SCID //Check if the SIM card is inserted properly. If so, it shows the identical heading code of the SIM code.
```

```
AT+CSQ // Check the signal intensity. If it returns CSQ:0, 0 here means no signal.
```

```
AT+CREG? //Check the GPRS CREG
```

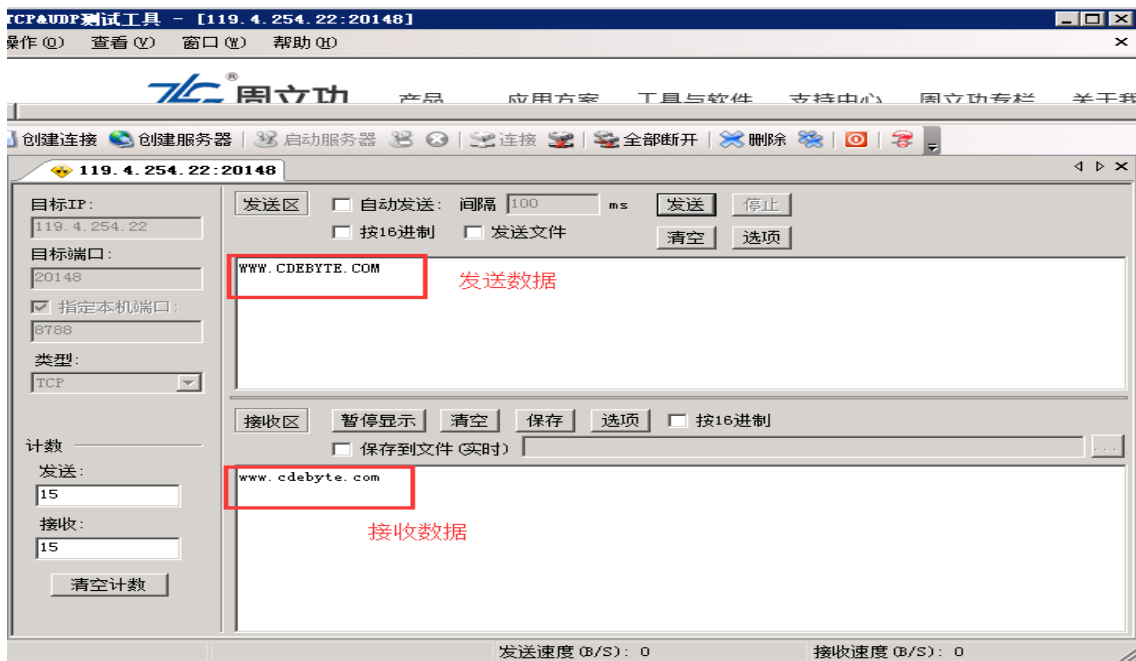
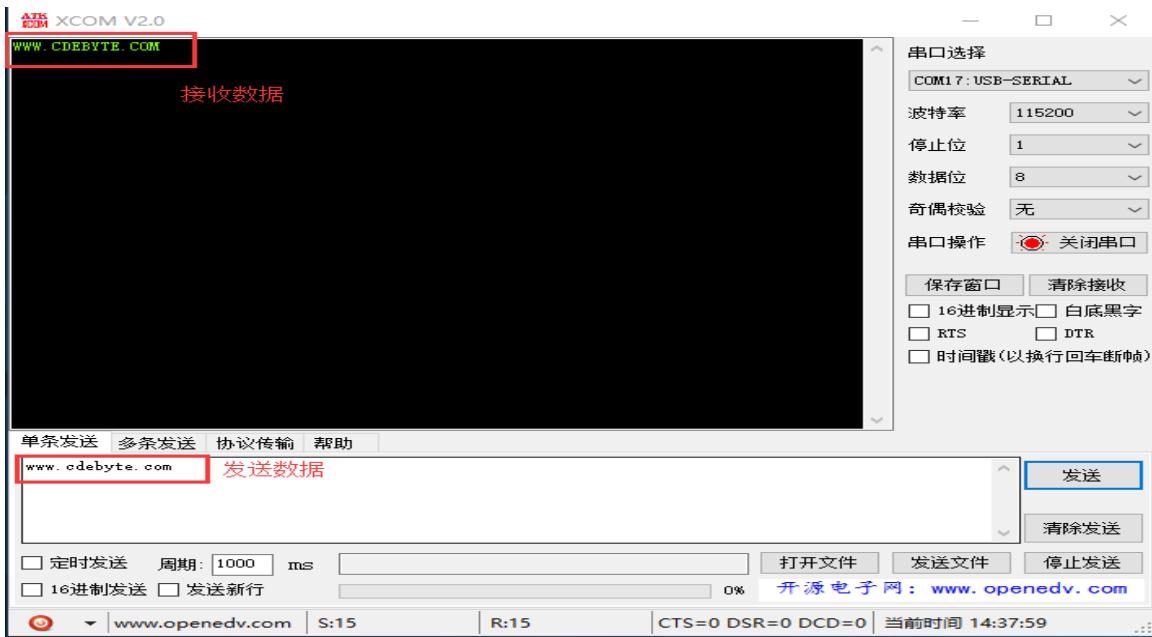
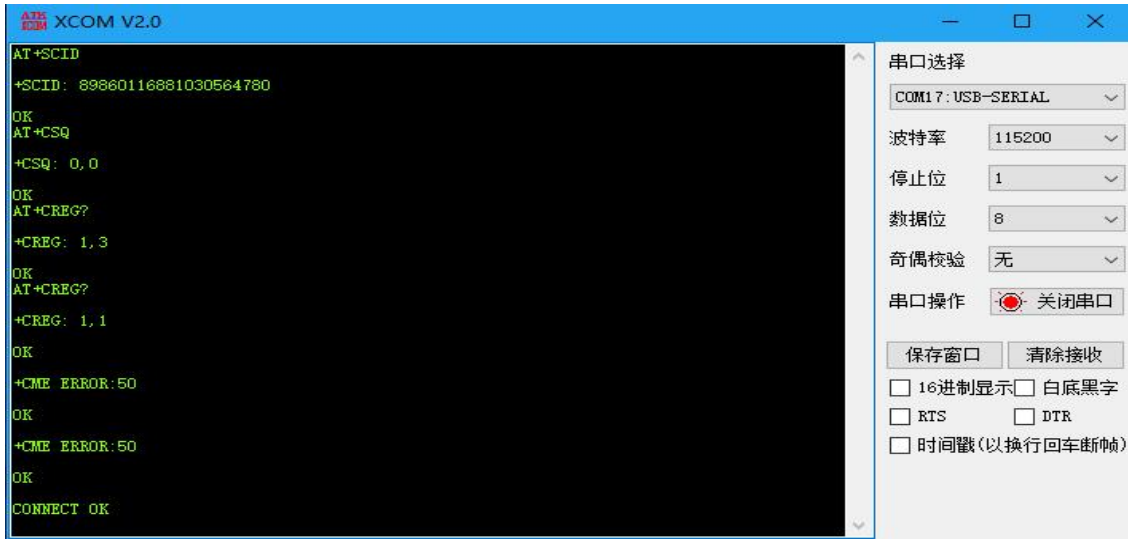
( For more details about the AT commands, please refer to the following chapters. )

When transceiver shows CONNECT OK, it indicates that TCP is connected successfully, which is shown as follow:





# Parameter Configuration



Transparent transmission with net testing tool

## 3. AT Parameter Setting

### 3.1 Parameter Setting Preparation

This transceiver features auto connection once powered on. It will output "CONNECT OK" if the transceiver is connected successfully and the transparent transmission mode is on. Users need to input +++ (\n) to switch to the configuration mode and to input ATO to switch back to the transmission mode. If the connection is failed, the transceiver is at the configuration mode and can be configured.

### 3.2 AT Commands Introduction

- The following AT commands are recommended to be capital.
- At local configuration, every AT commands should end with <CR>.
- Once the command is configured successfully, it shows "OK" .
- After all the following commands are configured, question mark(?)can be applied to check the current configuration, like AT+UARTCFG?.
- Restart is needed to activate the commands configuration.

#### 3.2.1 AT+UARTCFG: Baud Rate Configuration

AT+UARTCFG=Baud rate, data length, parity control, checkout, stop bit length.

- Baud rate: 115200 , 57600 , 38400 , 19200 , 14400 , 9600 , 4800 , 2400;
- Data length: BIT configuration of every byte. 0 (7byte), 1(8byte) ;
- Parity checkout: Check if there is parity in the configuration. 0(No parity), 1(odd parity), 2(even parity), 3(0 parity), 4(1 parity)
- Stop bit length: 0(1 byte), 1(2 byte)

If pulled down when the transceiver is powered on, it is defaulted as 115200,1,0,0.

For example:

Configuration: AT+UARTCFG=115200,1,0,0

Return: OK

Checkout: AT+UARTCFG?

Return: +UARTCFG: 115200,1,0,0 OK

Configuration(default): AT+UARTCFG=115200,1,0,0

#### 3.2.2 AT+DSCADDR: Net Server Parameter Configuration

AT+DSCADDR=0,"TCP", "139.199.157.166",80

AT+DSCADDR=1,"UDP", "www.cdebyte.com",80

- Primary and sub center: 0 represents primary center, 1 represents sub center. It' s defaulted to connect with the primary center and then connect to sub center if the primary center connection failed. The trail of connection between these two keeps going. The two centers will be configured as primary center if no sub center.
- TCP/UDP option: It supports TCP and UDP. The current one is based on the last configuration and sever communication protocols.
- SERVER IP address : It' s the address of server which conducts TCP/IP communication with the transceiver. Both IP address and domain name are acceptable. The transceiver features DNS.
- Port NO.: 1-65535. It' s the port configuration of the server which conducts communication with the transceiver. The transceiver will send IP data packet to certain port.

Server parameter(default)

For example:

Config: AT+DSCADDR=0,"UDP", "218.242.43.254",108

Return: OK

Config: AT+DSCADDR=1,"TCP", "218.242.43.254",108

Return: OK  
 Checkout: AT+DSCADDR?  
 Return: +DSCADDR: 0,"TCP" IP/Domain: "218.242.43.254" Port: 18  
       +DSCADDR: 1,"TCP" IP/Domain: "218.242.43.254" Port: 18  
 OK  
 Config: AT+DSCADDR=0,"TCP","www.cdebyte.com",80  
 Return: OK  
 Config: AT+DSCADDR=1,"UDP","www.cdebyte.com",80  
 Return: OK  
 Checkout: AT+DSCADDR?  
 Return : +DSCADDR: 0,"UDP" IP/Domain: " www.cdebyte.com " Port: 80  
       +DSCADDR: 1, "UDP" IP/Domain: " www.cdebyte.com " Port: 80  
 OK  
 Sever parameter(default) :  
 AT+DSCADDR=0,"TCP","139.199.157.166",80  
 AT+DSCADDR=1,"UDP","www.cdebyte.com",80

### 3.2.3 AT+DTUID: Transceiver Configuration ID

AT+DTUID=1,0,0000001  
 MODE option: To upload ID or not when connection is successful  
     2 Upload ID and the data packet to the server when connection is successful  
     1 Upload ID to the server when connection is successful  
     0 Not to upload ID to the server when connection is not successful  
 Format configuration : 0-1  
     1 ASCII format (1-30)  
     2 HEX format (2-60 , HEX format ID digit is even.)  
 ID configuration: transceiver ID digit  
 For example:  
 Checkout: AT+DTUID?  
 Return: +DTUID: 0,0,00000000001 Ok  
 AT+DTUID=1,0,31654646494688  
 Return: OK  
 AT+DTUID=1,1,12345678  
 Return: OK Checkout: AT+DTUID?  
 Return: +DTUID: 1,1, 12345678 Ok  
 Default: AT+DTUID=0,0,0000001

### 3.2.4 AT+KEEPALIVE: Keepalive and Interval

AT+KEEPALIVE=10,0, www.cdebyte.com

- Keepalive interval configuration:  
 0-65535, not available when set as 0. When time' s up, and the transceiver doesn' t receive the data packet, a defined data packet by users will be sent. The measurement is second, and the maximum of it is 65535.
- Keepalive format configuration: 0-1  
 0 ASCII format (1-30)  
 1 HEX format (2-60 , HEX format ID digit is even.)
- Keepalive configuration:  
 The certain data received will be packed and sent to the server. The length of ASCII format is 1-15, and that of the HEX format is 2-30.  
 For example:  
 Configuration: AT+KEEPALIVE=10,1,aabbccddeeff  
 Return: OK  
 Checkout: AT+KEEPALIVE?  
 Return: +KEEPALIVE: 10,1,aabbccddeeff

OK

Configuration: AT+KEEPALIVE=0,0, cdebyte

### 3.2.5 AT+ACKTIME: Responding Time Configuration

AT+ACKTIME=N

- Responding configuration: The value range of N is 0-65535. not available when set as 0. When time' s up, and the transceiver doesn' t receive the data packet, the internet is off, under reconnection or restart. The measurement is second, and the maximum of it is 65535. It' s advisable to configure the responding time for users who is not so familiar with server responding mechanism. The default responding time is 0.

For example:

AT+ACKTIME=10

Return: OK

Checkout: AT+ACKTIME?

Return: +ACKTIME: 10

OK

Configuration(default): AT+ACKTIME=0. Recommended responding time: 120S

### 3.2.6 AT+DTUPACKET: Configure Packing Time and Length of Data

AT+DTUPACKET=1000,5

- Packing time configuration:  
0-65535(default: 0). When transceiver doesn' t receive data in a certain time, the data will be packed and sent to the server. The measurement is millisecond and the maximum of it is 65535.
- Packing length configuration:  
0-3072(default: 0). When transceiver receives certain amount of data, the data will be packed and sent to the server. The measurement is byte, and the maximum of it is 3072.
- When the packing time or the packing length is realized, the data will be packed and sent to the server. not available when set as 0.
- The recommended minimum packing time is 40 milliseconds if needed.

For example:

AT+DTUPACKET=1000,5

Return: OK

Checkout: AT+DTUPACKET?

Return: +DTUPACKET:1000 , 5

OK

Configuration(default): AT+DTUPACKET=0,0; Recommended minimum packing time: 100MS

### 3.2.7 AT&W: Save Configuration

AT&W

Return: OK

Do not restart at once or power off to restart manually after saving configuration. It' s advisable to conduct command(AT+CFUN=1) to restart, or the data might not be saved successfully.

### 3.2.8 AT+CFUN=1,1: Transceiver Restart

AT+CFUN=1,1 return: OK

The transceiver will restart with this command after saving configuration and returning OK.

For example:

AT&W

OK

AT+CFUN=1,1

OK

### 3.2.9 AT+DEBUGMODE Debug Mode

AT+DEBUGMODE=? Return:

+DEBUGMODE: (0,1)

OK

0 : Debug mode on. Available to print the parameter. 1: Debug mode off. Not available to print the parameter.

For example:

AT+DEBUGMODE=?

+DEBUGMODE: (0,1)

OK

AT+DEBUGMODE?

+DEBUGMODE: 1

OK

AT+DEBUGMODE=0

OK

Configuration: AT+DEBUGMODE=1

### 3.2.1.0 AT+DTUFILTER Filter Configuration

AT+DTUFILTER=?

Return :

+DTUFILTER: (0,1)

OK

0: Filter off, available to show call-ins and requests

1: Filter on, not available to show call-ins and requests

For example :

AT+DTUFILTER=?

+DTUFILTER: (0,1)

OK

AT+DTUFILTER?

+DTUFILTER: 1

OK

AT+DTUFILTER=0

OK

Configuration (default) : AT+DTUFILTER=1

### 3.2.11 AT+CSTT APN Configuration

AT+CSTT=?

+CSTT: "APN", "USER", "PWD"

OK

First parameter: APN

First parameter: account

First parameter: password

For example :

AT+CSTT?

+CSTT: "CMNET", "", ""

OK

AT+CSTT="M2MNET","", ""

OK

Configuration(default) : AT+CSTT="CMNET","", ""

### 3.2.12 AT+RELINKTIME Relink Time

AT+RELINKTIME=?

+RELINKTIME: (3-600)

OK

Parameter: 3S-600S

For example:

```
AT+RELINKTIME?  
+RELINKTIME: 20  
OK  
AT+RELINKTIME=30  
OK  
Configuration: AT+RELINKTIME=5
```

### 3.2.13 AT+DSCTIME Server Connection Timeout

Note: This timeout includes:

- When transceiver and GPRS are on, the transceiver will restart if the connection to the server is not successful over 120S(default).
- When connection is off, the transceiver will restart if the connection to the server is not successful over 120S(default).

```
AT+DSCTIME=?
```

```
+DSCTIME: (40-600)
```

```
OK
```

```
parameter: 40S-600S
```

For example:

```
AT+DSCTIME?
```

```
+DSCTIME: 120
```

```
OK
```

```
AT+DSCTIME=40
```

```
OK configuration(default): AT+RELINKTIME=120
```

### 3.2.14 AT+DTUALL? Get Parameters

```
AT+DTUALL?
```

```
Return: OK
```

For example:

```
Checkout: AT+DTUALL?
```

```
Return:
```

```
+DSCADDR: 0,"TCP","www.cdebyte.com",80
```

```
+DSCADDR: 1,"TCP","www.cdebyte.com",80
```

```
+DTUID:0,0,31654646494688
```

```
+KEEPALIVE:10,0,3000,5,0,cdebyte
```

```
+RELINKTIME:5
```

```
+DSCTIME: 120
```

```
+UARTCFG:115200,1,0,0
```

```
+DEBUGMODE:1
```

```
+DTUFILTER:1
```

```
+CSTT:CMNET,,
```

## 4. Remote Parameter Configuration

### 4.1 Introduction

- All the following commands should be in capital letters instead of small letters or both of them.
- When configuration and checkout are sent to the transceiver, the transceiver will return corresponding message automatically.
- Once the configuration is done, it is saved automatically.
- Message requests won't be saved in case that junk and configuration requests take up all the storage.
- Remote here means message and TCP/UDP server.

### 4.1.1 @DTU:0000:CGMR? Software Version

For example:

```
Send checkout request to transceiver: @DTU:0000:CGMR?  
Return when checkout is done: @DTU:0000:CGMR?  
+CGMR: B3524_B5_R02_A06_D151224  
Return when checkout is failed: @DTU:1234:CGMR? (Input wrong password to test)  
ERROR
```

### 4.1.2 @DTU:0000:PASSWORD:aaaa configuration Request Password

Send configuration request @DTU:0000:PASSWORD: aaaa. Switch password from 0000 to aaaa.

Password(default): 0000. Password(new): aaaa. It' s fixed 4 digits' password which composed of number or small and capital letters.

Note: Users have to input the right old password to configure a new one.

### 4.1.3 @DTU:0000:DSCADDR:0,TCP,218.242.43.254,108

#### Net Server Parameter configuration

Send configuration request @DTU:0000:DSCADDR:0,TCP,218.242.43.254,108

The connection option of primary server configuration center: TCP

Net server address: 218.242.43.254

Net port: 108

Send configuration request @DTU:0000:DSCADDR: 1,UDP,www.cdebyte.com,80

The connection option of sub server configuration center: UDP

Net server domain: www.cdebyte.com

Net port: 80

For example:

```
Send configuration request: @DTU:0000:DSCADDR:0,TCP,218.242.43.254,108  
Return when configuration is done: @DTU:0000:DSCADDR:0,TCP,218.242.43.254,108  
Ok  
Return when configuration is failed: @DTU:0000:DSCADDR:TCP,218.242.43.254,108 (No sub center parameter)  
ERROR  
Send checkout request: @DTU:0000:DSCADDR?  
Return when checkout is done: @DTU:0000:DSCADDR?  
+DSCADDR: 0,"TCP" IP/Domain: "218.242.43.254" Port: 108  
+DSCADDR: 1,"TCP" IP/Domain: "218.242.43.254" Port: 108  
Return when checkout is failed: @DTU:1234:DSCADDR? (Input wrong password to test)  
ERROR  
Parameter and explanation reference: AT+DSCADDR
```

### 4.1.4 @DTU:0000:DTUID:1,0,31654646494777 Transceiver ID

Send configuration request @DTU:0000:DTUID:1,0,31654646494777

Send checkout request @DTU:0000:DTUID?

Powered on ID configuration. ID format: ASCII. ID: 31654646494777

MODE option: To upload ID or not when connection is successful

- 2 Upload ID and the data packet to the server when connection is successful
- 1 Upload ID to the server when connection is successful
- 0 Not to upload ID to the server when connection is not successful

Format configuration: 0-1

- 1 ASCII format (1-30)

2 HEX format (2-60, HEX format ID digit is even.)

ID configuration: transceiver ID digit

For example:

Send configuration request: @DTU:0000:DTUID:1,0,31654646494777

Return when configuration is done: @DTU:0000:DTUID:1,0,31654646494777

OK

Return when configuration is failed: @DTU:1234:DTUID:1,0,31654646494777 (Input wrong password to test)

ERROR

Send checkout request: @DTU:0000:DTUID?

Return when checkout is done: @DTU:0000:DTUID?

+DTUID: 1,0,31654646494777

Return when checkout is failed: @DTU:1234:DTUID? (Input wrong password to test) ERROR

Parameter and explanation reference: AT+DTUID

## 4.1.5 @DTU:0000:KEEPALIVE:10,5,3000,5,0,kingcom

### Keepalive Interval Configuration

Responding time, packing time, packing length, keepalive format, keepalive

Send configuration request @DTU:0000:KEEPALIVE:10,5,3000,5,0,cdebyte

Send checkout request @DTU:0000:KEEPALIVE?

Configure keepalive interval as 10s, responding time as 5s, packing time as 3000ms, packing length is 5 digits, keepalive format as ASCII, keepalive as cdebyte.

Note: recommended responding time: 120s, minimum packing time:100ms.

For example :

Send configuration request: @DTU:0000:KEEPALIVE:10,5,3000,5,0, cdebyte

Return when configuration is done: @DTU:0000:KEEPALIVE:10,5,3000,5,0, cdebyte

OK

Return when configuration is failed: @DTU:0000:KEEPALIVE:10,5,3000,5,0, cdebyte

ERROR

Send checkout request: @DTU:0000:KEEPALIVE?

Return when checkout is done: @DTU:0000:KEEPALIVE?

+KEEPALIVE:10,5,3000,5,0, cdebyte

Return when checkout is failed: @DTU:1234:KEEPALIVE? (Input wrong password to test) ERROR

Parameter and explanation reference: AT+KEEPALIVE、AT+ACKTIME、AT+DTUPACKET

## 4.1.6 @DTU:0000:UARTCFG:9600,1,0,0 UART Baud Rate Configuration

Send configuration request @DTU:0000:UARTCFG:9600,1,0,0

Send checkout request @DTU:0000:UARTCFG?

Baud rate configuration: 9600 , Digit: 8bit , Parity checkout: 0 (N/A)

For example:

Send configuration request: @DTU:0000:UARTCFG:9600,1,0,0

Return when configuration is done: @DTU:0000:UARTCFG:9600,1,0,0

OK

Return when configuration is failed: @DTU:0000:UARTCFG:9600,1,0,0

ERROR

Send checkout request: @DTU:0000:UARTCFG?

Return when checkout is done: @DTU:0000:UARTCFG?

+UARTCFG:9600,1,0,0



Return when checkout is failed: @DTU:1234:UARTCFG? (Input wrong password to test) ERROR  
Parameter and explanation reference: AT+UARTCFG

### 4.1.7 @DTU:0000:POWEROFF Transceiver Restart

Send checkout request: @DTU:0000:DEBUGMODE?

Return when checkout is done: @DTU:0000:DEBUGMODE?

+DEBUGMODE:0

Return when checkout is failed: @DTU:1234:DEBUGMODE? (Input wrong password to test)

ERROR

Parameter and explanation reference: AT+DEBUGMODE

### 4.1.8 @DTU:0000:DEBUGMODE:0 Debug Mode

Send configuration request@DTU:0000:DEBUGMODE:0 Debug mode on

Send configuration request@DTU:0000:DEBUGMODE:1 Debug mode off

Send checkout request@DTU:0000:DEBUGMODE?

For example:

Send configuration request: @DTU:0000:DEBUGMODE:0

Return when configuration is done: @DTU:0000:DEBUGMODE:0

OK

Return when configuration is failed: @DTU:1234:DEBUGMODE:0 (Input wrong password to test)

ERROR

Send checkout request: @DTU:0000:DEBUGMODE?

Return when checkout is done: @DTU:0000:DEBUGMODE?

+DEBUGMODE:0

Return when checkout is failed: @DTU:1234:DEBUGMODE? (Input wrong password to test)

ERROR

Parameter and explanation reference: AT+DEBUGMODE

### 4.1.9 @DTU:0000:DTUFILTER:0 Filter Configuration

Send configuration request@DTU:0000:DTUFILTER:0 Filter on

Send configuration request @DTU:0000:DTUFILTER:1 Filter off

Send checkout request @DTU:0000:DTUFILTER?

For example:

Send configuration request: @DTU:0000:DTUFILTER:0

Return when configuration is done: @DTU:0000:DTUFILTER:0

OK

Return when configuration is failed: @DTU:1234:DTUFILTER:0 (Input wrong password to test)

ERROR

Send checkout request: @DTU:0000:DTUFILTER?

Return when checkout is done: @DTU:0000:DTUFILTER?

+DTUFILTER:0

Return when checkout is failed: @DTU:1234:DTUFILTER? (Input wrong password to test) ERROR

Parameter and explanation reference: AT+DTUFILTER

Return when checkout is failed: @DTU:1234:RELINKTIME? (Input wrong password to test) ERROR

Parameter and explanation reference: AT+RELINKTIME

## 4.1.10 @DTU:0000:RELINKTIME:60 Relink Interval Configuration

Send configuration request @DTU:0000:RELINKTIME:60 Reconnection time: 60S

Send checkout request @DTU:0000:RELINKTIME?

For example :

Send configuration request: @DTU:0000:RELINKTIME:60

Return when configuration is done: @DTU:0000:RELINKTIME:60

OK

Return when configuration is failed: @DTU:1234:RELINKTIME:60 (Input wrong password to test)

ERROR

Send checkout request: @DTU:0000:RELINKTIME?

Return when checkout is done: @DTU:0000:RELINKTIME?

+RELINKTIME:60

Return when checkout is failed: @DTU:1234:RELINKTIME? (Input wrong password to test)

ERROR

Parameter and explanation reference: AT+RELINKTIME

## 4.1.11 @DTU:0000:DSCTIME:60

### Connection Timeout Configuration

Send configuration request @DTU:0000:RELINKTIME:60 Relink time: 60S

Send checkout request @DTU:0000:RELINKTIME?

For example:

Send configuration request: @DTU:0000:RELINKTIME:60

Return when configuration is done: @DTU:0000:RELINKTIME:60

OK

Return when configuration is failed: @DTU:1234:RELINKTIME:60 (Input wrong password to test)

ERROR

Send checkout request: @DTU:0000:RELINKTIME?

Return when checkout is done: @DTU:0000:RELINKTIME?

+RELINKTIME:60

Return when checkout is failed: @DTU:1234:RELINKTIME? (Input wrong password to test)

ERROR

Parameter and explanation reference: AT+RELINKTIME

## 4.1.12 @DTU:0000:DSCTIME:60 Connection Timeout Configuration

Send configuration request @DTU:0000:DSCTIME:60 Relink time: 60S

Send checkout request @DTU:0000:DSCTIME?

For example:

Send configuration request: @DTU:0000:DSCTIME:60

Return when configuration is done: @DTU:0000:DSCTIME:60

OK

Return when configuration is failed: @DTU:1234:DSCTIME:60 (Input wrong password to test)

Send checkout request: @DTU:0000:DSCTIME?

Return when checkout is done: @DTU:0000:DSCTIME?

+DSCTIME:60

Return when checkout is failed: @DTU:1234:DSCTIME? (Input wrong password to test) ERROR

Parameter and explanation reference: AT+DSCTIME

### 4.1.13 @DTU:MM CZ Password Reset Configuration

Send request @DTU:MM CZ request of switching the password into the default one

### 4.1.14 @DTU:0000:DTUALL? Get Parameters

Send request @DTU: 0000:DTUALL? Request of obtaining all the parameters

Notes: This command is only applicable in sever configuration. SMS is not applicable because the data length is beyond that of one SMS.

For example:

Send checkout request: @DTU: 0000:DTUALL?

Return when checkout is done: +DSCADDR: 0,"TCP" IP/Domain: "139.199.157.166" Port: 8008

+DSCADDR: 1,"TCP" IP/Domain: "139.199.157.166" Port: 8008

+DTUID: 0,0,000000000001

+KEEPALIVE: 0,0,0,0,0,cdebyte

+UARTCFG: 115200,1,0,0

+DEBUGMODE: 1

+DTUFILTER: 1

Send checkout request: @DTU:1234:DTUALL? (Input wrong password to test)

Return when checkout is failed: @DTU:1234:DTUALL?

ERROR

### 4.1.15 @DTU:0000:CSTT? Get APN

Send request @DTU: 0000:APN? Request of obtaining APN information

For example:

Send checkout request: @DTU: 0000:CSTT?

Return when checkout is done: @DTU: 0000:CSTT?

+CSTT: CMNET,,

Send checkout request: @DTU: 1234:CSTT? (Input wrong password to test)

Return when checkout is failed: @DTU: 1234:CSTT? ERROR

### 4.1.16 @DTU:0000:CSQ? Get Signal Quality

Send request @DTU: 0000:CSQ? Request of obtaining signal quality

For example:

Send checkout request: @DTU: 0000:CSQ?

Return when checkout is done: @DTU: 0000:CSQ?

+CSQ: 24

Send checkout request: @DTU: 1234:CSQ? (Input wrong password to test)

Return when checkout is failed: @DTU: 1234:CSQ? ERROR

### 4.1.17 @DTU:0000:GPS? Get Location

Send request @DTU: 0000:GPS? Request of obtaining location

For example:

Send checkout request: @DTU: 0000:GPS?

Return when checkout is done: @DTU: 0000:GPS?

+GPS: Lac:0x1816,CellId:0xf2b2

Send checkout request: @DTU: 1234:GPS? (Input wrong password to test)

Return when checkout is failed: @DTU: 1234:GPS?

ERROR

## 4.1.18 @DTU:0000:AT&F Reset

Send request @DTU:0000:AT&F Request of resetting

For example:

Send request: @DTU:0000:AT&F

Return when checkout is done: @DTU:0000:AT&F

OK

Send request: @DTU:1234:AT&F

Return when checkout is failed: @DTU:1234:AT&F(Input wrong password to test)

ERROR

## 5. SMS

- SMS available
- Message in SMS will be sent but not saved.
- In order to set the report from the transceiver in SMS, users can input +++(No enter) to enter command mode. To cancel it, users can input AT+DTUFILTER=0 to enter filter mode.

## 6. NET Indicator Introduction

- Transceiver Net registry off: light on for 100MS, light off for 700MS
- Transceiver Net registry on: light on for 100MS, light off for 1900MS
- Transceiver server on: light on for 100MS, light off for 100MS

## 7. Notes

### 7.1 Notes for Powering on

- DTU UART baud rate(default): 115200
- DTU power on report: AT Ready
- 5s after DTU powered on, input AT+CPIN? to check if the SIM card is read successfully.
- DTU powered on with SIM card, it will restart when it fails to connect to GPRS with 45S, and after that it will restart when it fails to connect to the server in 2 m. DTU powered on without SIM card, it won't restart.
- DTU powered on with SIM card, it will return CONNECT OK when it connects to the server successfully and it enter transparent transmission mode. It stays at the configuration mode when not connected. Users can input configuration command to adjust DTU parameters.
- When DTU is at transparent transmission mode, users need to input +++(\n) to go back to configuration mode and configure the parameters.
- To enter transparent transmission mode, users need to input ATO.

## 7.2 Internet Connection

### 7.2.1 Wi-Fi Connection

- To check if the transceiver is on. The NET light is blinking when transceiver is on.
- To check if the SIM card is read properly.

Send: AT+CPIN? to transceiver.

Return: +CPIN:READY, SIM card is read properly

Return: +CME ERROR:10, SIM card is not read properly ( It is advisable to check the SIM card slot, change another card and the circuit. )

- To check if the transceiver has registered the base station.

Send: AT+CREG? To the transceiver

Return: +CREG: 1,5 or +CREG: 1,1 Registry ready

If not, it is advisable to check the antenna, signal density. (Input AT+CSQ to check the signal density)

- To check if the transceiver is connected to the GPRS.

Send: AT+CGATT? Transceiver

Return: +CGATT:1 GPRS ready. If not, GPRS not ready.

Send: AT+CGATT? Transceiver

Return: +CGATT:1,1 PDP is activated. If not, it is advisable to check whether the SIM card is overdue which leads to registry failure.

- To check if the domain/port the users have set connects to the public internet. It is advisable to check if the firewall, antivirus, security guard have disabled the net connection.

### 7.2.2 Connection Failure

- SIM card overdue.
- Corresponding server is off.
- Signal is weak. Return: COMMAND NO RESPONSE!

### 7.2.3 Easy Disconnection

To check if the antenna is connected properly, the server and the internet is stable, the internet environment is good, the IP is fixed or dynamic that is mapped to the computer from the port. It is advisable to fix the IP address on the computer in case that redistribution of router will lead to unknown mistakes.

## 7.3 Description of Connection failure

- CLOSED means that transceiver is connected to the server, but it is off because of server.
- +CME ERROR: 50 includes the following 5 situations
  - 1 ) SIM card overdue
  - 2 ) Server off

3 ) Other problems caused by internet

4 ) DNS failure

5 ) The current TCP/UDP is not IP INITIAL, IP STATUS, IP CLOSE (Check out with command: AT+CIPSTATUS). It is connected for more than once.

- Bad internet environment. Return: COMMAND NO RESPONSE!

## 8. Important Statement

1. CDEBYTE reserves the right of final interpretation and modification of all the contents of this manual.

2. As the hardware and software products continuously improving, this manual may subject to change without notice, please refer to the latest version.

3. Everyone is responsible for protecting the environment: to reduce the use of paper, we only provide electronic documents of the English manual, if necessary, please go to our official website to download.

## 9. About Us

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