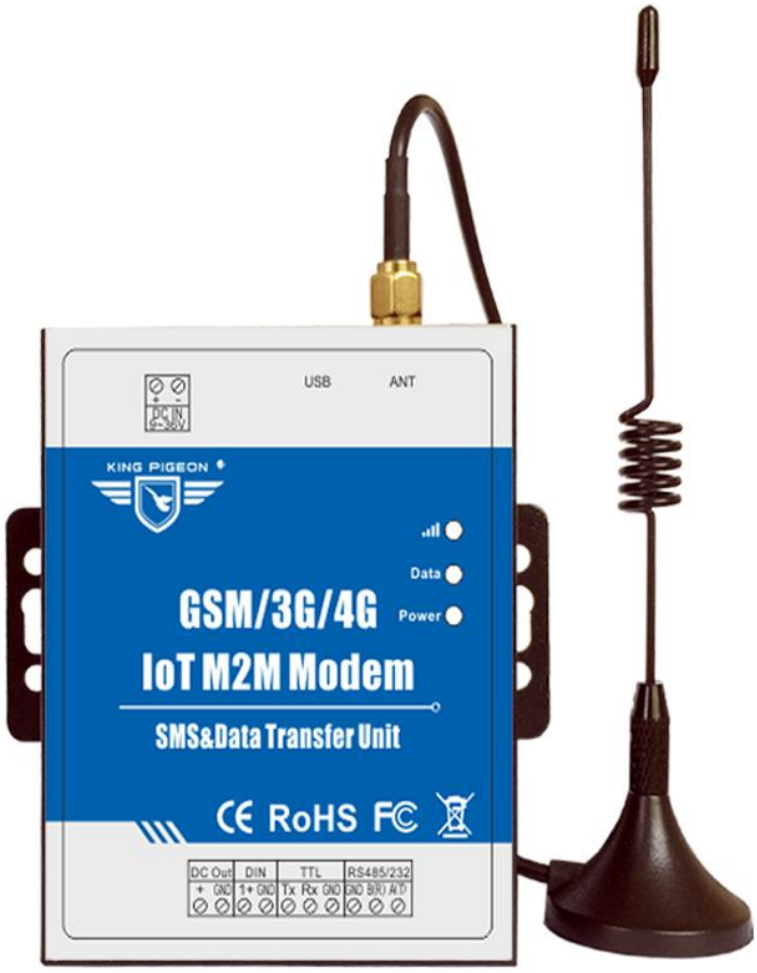
Wireless Data Transmission Solution!

Wireless M2M Solutions!

Wireless IoT Solutions!

Modbus RTU to Modbus TCP Converter

GSM SMS/GPRS/3G/4G IOT M2M Modem DTU



KING PIGEON

User Manual

Ver 1.0

D222/D223

Date Issued: 2017-06-12

www.GPRS-M2M.com

Table of Contents

This handbook has been designed as a guide to the installation and operation of GSM/GPRS/3G/4G IOT M2M Modem DTU D222/D223.
Statements contained in the handbook are general guidelines only and in no way are designed to supersede the instructions contained with other products.
We recommend that the advice of a registered electrician be sought before any Installation work commences.
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【UPGRADE HISTORY】

DATE	FIRMWARE VERSION	HARDWARE VERSION	DESCRIPTION

1. Brief introduction

The GSM/GPRS/3G/4G IOT M2M Modem is a powerful and programmable multi-purpose wireless cellular modem and data transfer unit (DTU). It embedded high reliable 32bit ARM9 MCU and industrial GSM/GPRS/3G/4G Cellular Engine inside. It provides a secure, high speed, reliable wireless data transmission between com port and internet connection for customers over GPRS/3G/4G wireless cellular network. Also, it can be used as SMS modem and Modbus RTU to Modbus TCP converter.

Moreover, it is suitable for transparent transferring SMS text between mobile phone, computer and RS232/RS485/TTL Serial port over GSM/3G/4G wireless cellular network. It can be used as SMS modem supports transparent transferring SMS, AT Commands, and provides 1 digital input can be used as SMS Alarm and Pulse Counter Alarm, too.

The GPRS/3G/4G wireless cellular communication has become widely used of industrials and utilities and many customers are requiring reliable, flexible and cost-effective data channel to build their information system. Many applications such as Remote device monitoring, remote automatic metering system, ATM, data logging system, POS, SCADA and surveillance system will require data channels covered all country.

The GSM/GPRS/3G/4G IOT M2M Modem is an ideal solution for factory automation, environmental monitoring and remote device management for M2M industry. Meanwhile, it is supplied with simple and user friendly PC Configurator to configuration, easy to installation.

Model List Table

Model No.	Applications	Serial Port	DIN
D222	AT Command SMS Transparent transfer, DIN or Pulse Counter monitoring.	USB,TTL,RS485 or RS232	1 Digital inpupt, Can be used as DIN monitoring and Pulse counter SMS Alarm.
D223	AT Command SMS Transparent transfer, DIN or Pulse Counter monitoring. Data Transparent Transfer, Modbus RTU to Modbus TCP Converter	USB,TTL,RS485 or RS232	1 Digital input, Can be used as event trigger the Modem online and Can be used as DIN monitoring and Pulse counter SMS Alarm.
Notice: 1. Default is GSM/GPRS Module inside, 3G/4G Module is optional; 2. Default is TTL+RS485 Serial Port, RS232 is optional. 3. The D223 include all of the D222's functions, but the D222 hasn't Data Transparent Transfer and Modbus TCP function.			

The GSM/GPRS/3G/4G IOT M2M Modem working Diagrams:

●Used as SMS Modem Working Diagram

E.g.: Use PC or Computer send AT Commands to broadcast SMS to mobile phone or SMS Controllers or other SMS Devices for remote control or message push purpose.

● Used as SMS Transparent Transfer Working Diagram

E.g.: Use mobile phone to control special device or read meter via SMS. So send the PLC's or meter's Commands by SMS to the PLC or Meter, like Modbus RTU Commands. After the PLC or meter response data to serial port, the D222 will forward to Mobile phone by SMS.

●Used as DIN or Pulse Counter Alarm Working Diagram

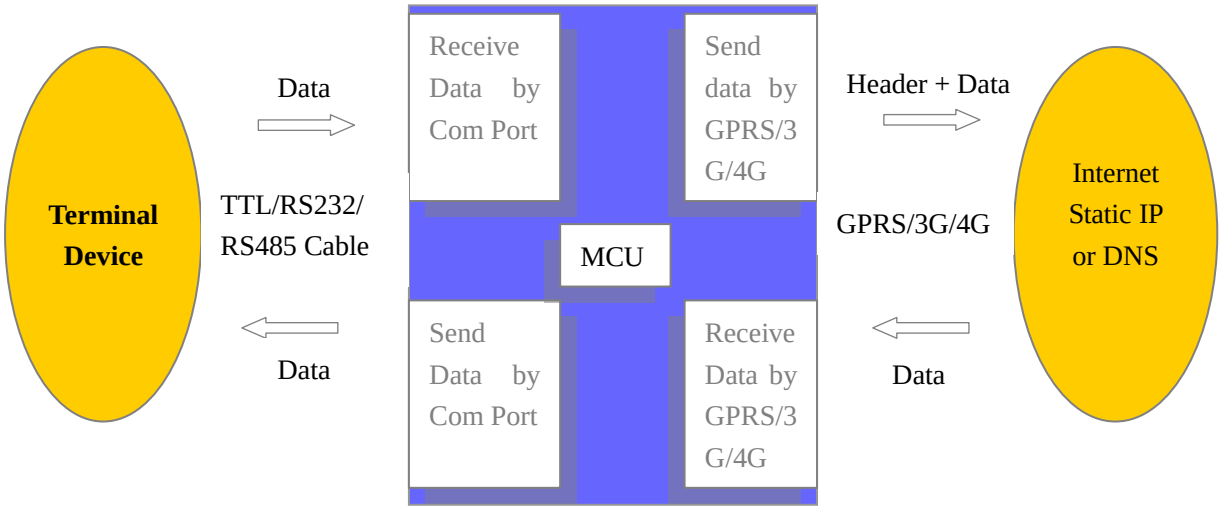
E.g.: Use for monitoring 1 digital input or pulse counter, while active or the counter reach the preset value, will send SMS to users' mobile phone.

●Used as Data Transparent Transfer Working Diagram

E.g.: Use for transmitting data between internet server and remote smart meters, PLC, Data Acquisition Modules, instruments and so on, perform as DTU and Modbus RTU to Modbus TCP Converter function.

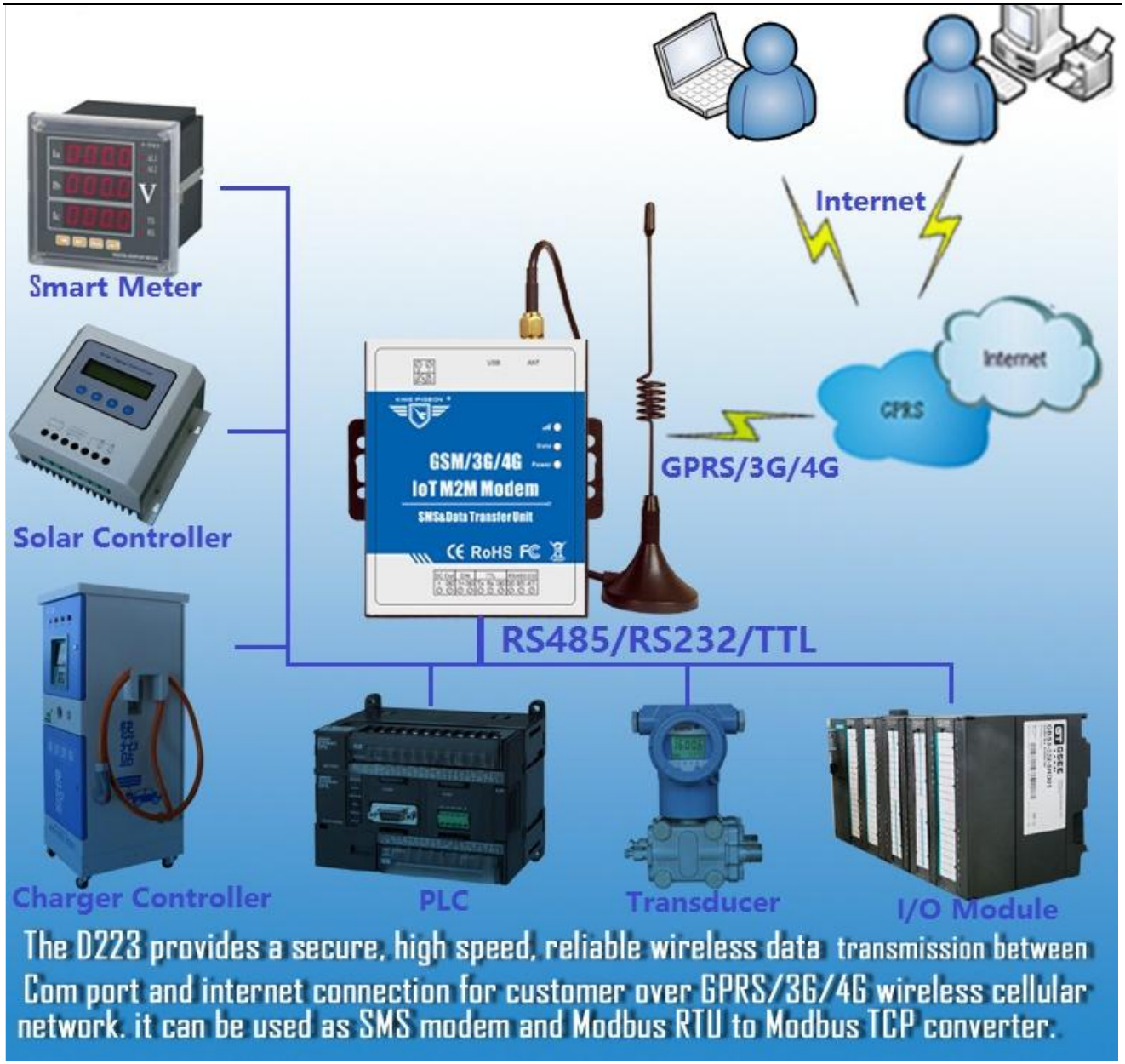
How Does the GSM/GPRS/3G/4G IOT M2M Modem works?

The GSM/GPRS/3G/4G IOT M2M Modem with dynamic IP address, if you want to create the connection between the server and GSM/GPRS/3G/4G IOT M2M Modem, must using call, SMS or Com port to activate the GSM/GPRS/3G/4G IOT M2M Modem online firstly. Then the GSM/GPRS/3G/4G IOT M2M Modem will create the connection to the Server to build the tunnel, so the server can communicate to the GSM/GPRS/3G/4G IOT M2M Modem. The GSM/GPRS/3G/4G IOT M2M Modem with the heartbeat, it can keep the connection tunnel online all the time. Once the connection disconnected, the GSM/GPRS/3G/4G IOT M2M Modem will auto redial to create the connection. The server must with static IP address or DNS.



Under TCP/UDP mode, when the data length exceeds a fixed length or within the fixed time no new data received, the GSM/GPRS/3G/4G IOT M2M Modem will start to process the received data, packing the data then send to the specified IP address and Port or DNS and Port. Or unpack the data packets from the internet then transfer to the com port according to the baud rate.

The GSM/GPRS/3G/4G IOT M2M Modem suitable for below applications:



◆The Electricity Power Industry

1. Remote Meter Reading
2. Power monitoring
3. Streetlight monitoring
4. Meter monitoring
5. Control Room monitoring
6. Power distribution automation remote control systems

◆Automatic monitoring system

◆Vending Machines,ATM,POS

◆The traffic Industry

1. Traffic instructions
2. Vehicle Park Guide
3. Expressway monitoring
4. Traffic lights control and photograph transmission

◆Water Industry

1. Water Monitoring
2. Water Meter Reading
3. Real-time transmission of the water supply network monitoring

◆Environment , meteorology, oil and other industries

1. Environmental protection of key pollution sources monitoring
2. Environmental monitoring
3. Meteorological monitoring

◆The noise real-time monitoring

◆Oilfield monitoring

◆Heating network monitoring

◆Coal monitoring

◆Seismic monitoring

◆All kinds device with RS232 serial port of the PLC, RTU wireless data transmission.

In one word, the GSM/GPRS/3G/4G IOT M2M Modem suitable for transferring data from device to internet, and transferring data from internet(Monitoring center or server) to device.

2.Safety Directions

Safe Startup
Do not use celluar unit when using celluar equipment is prohibited or might bring disturbance or danger.

Interference
All wireless equipment might interfere network signals of celluar unit and influence its performance.

Avoid Use at Gas Station
Do not use the unit at a gas station. Power off celluar unit when it near fuels or chemicals.

Power it off near Blasting Places
Please follow relevant restrictive regulations. Avoid using the device in blasting places.

Reasonable Use
Please install the product at suitable places as described in the product documentation. Avoid signal shielded by covering the mainframe.

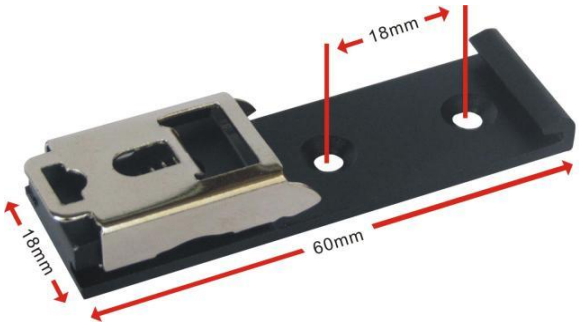
Use Qualified Maintenance Service
Maintenance can be carried out only by qualified maintainer.

3. Standard Packing List

GSM/GPRS/3G/4G IOT M2M Modem X1, GSM/3G/4G ANT X1, User Manual and Configurator X1(CD).

Note: The package does not include any SIM card.

Optional: 35mm Standard DIN rail fixed Bracket

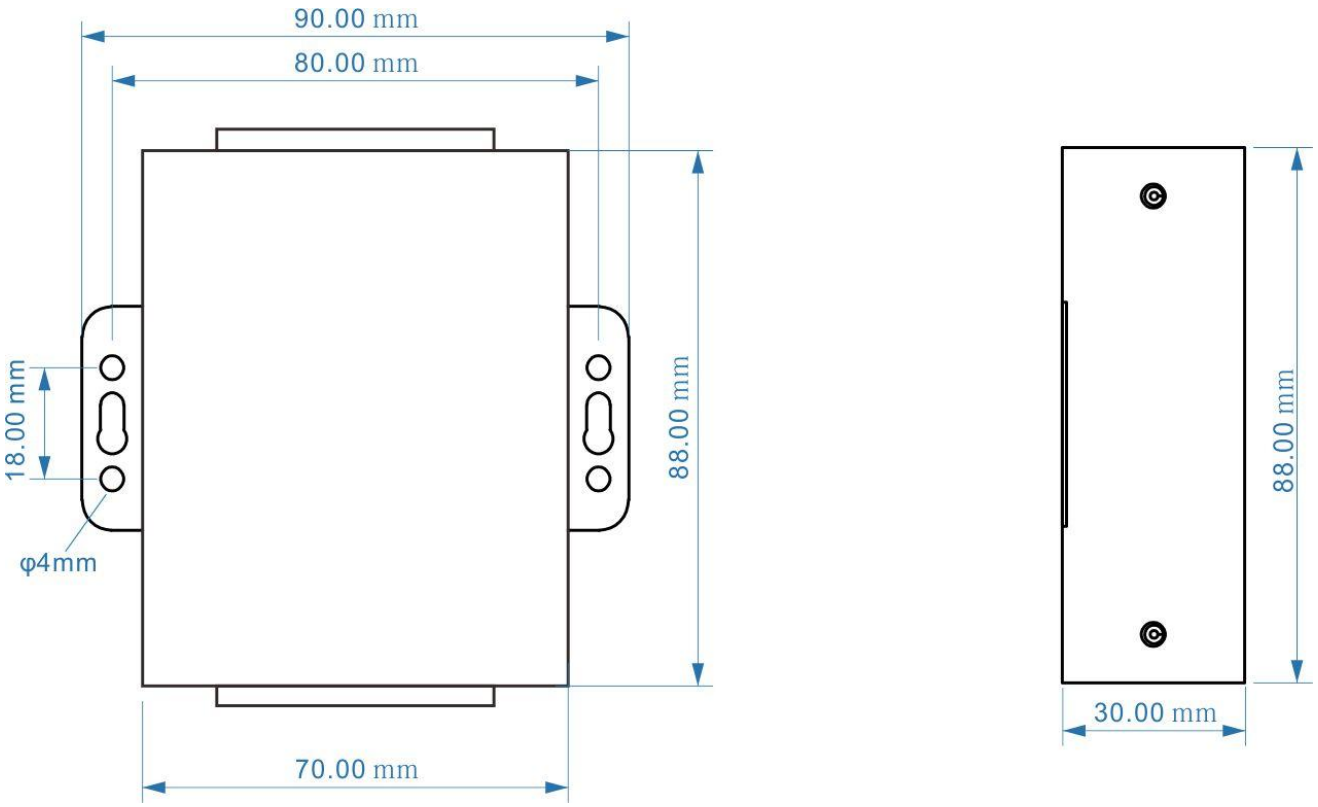


4. Mainly Features

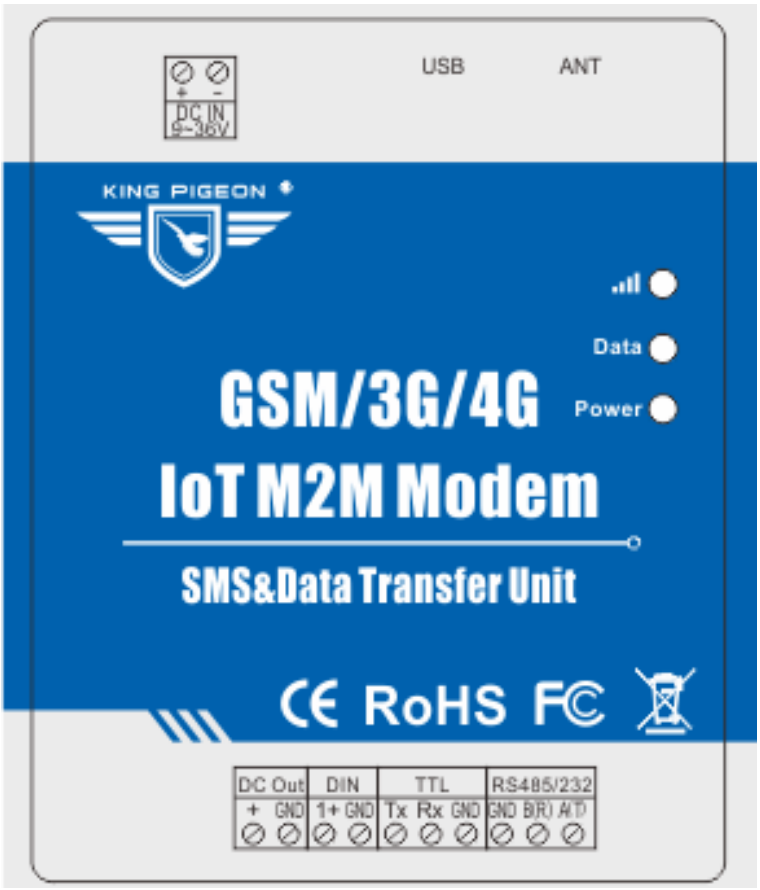
- Can be operated from anywhere, no distance limitation;
- Quad band 850/900/1800/1900Mhz GSM GPRS Module inside;
- 3G UMTS/HSDPA/4G Modules are optional.;
- Embedded 32 bit ARM9 MCU, reliable performance with in-built watchdog;
- Multi-functional, supports AT Commands, Transparent SMS and Data Transfer;
- 1 TTL port can be used for TTL device data transfer;
- 1 three-wire RS485 serial port, RS232 is optional, Baud rate adjustable from 1200~115200bps, ± 15KV ESD protection;
- 1 digital input, supports dry contact, wet contact, pulse counter can be used as alarm, or trigger to wakeup or online event;
- Powerful programmable features, supports programmable handshake message,etc;
- Real-time online data transfer, supports always only or event triggered online;
- Build-in protocol stack, support TCP/UDP network protocol;
- Support transparent data transfer and Modbus TCP protocol conversion;
- Heartbeat function and autodial to ensure the device online;
- Supports DNS and static data service center IP address;
- Supports wakeup by SMS, Call and Comport, Timer, Digital input or pulse counter input;
- Automatically restart the cellular module while communication failure, and resend the data in the cache, the cache capacity up to 12K bytes, also when cellular communication failure will alert by SMS text;
- Supports remotely restart the device, and configure it by SMS commands remotely;
- Up to 10 user's phone number to receive alarm and daily report SMS/Call;
- Industrial class design suitable for long time work applications;
- Support configure parameters, load profiles and upgrade the firmware via PC;
- Wall mount or 35mm standard DIN rail Design, convenient installation,
- Metallic cover, small size, exterior dimension is L70*W88*H30mm.

5. Physical Layout and Installation Diagram

5.1 Control Unit physical layout



5.2 Interface Instructions for installation

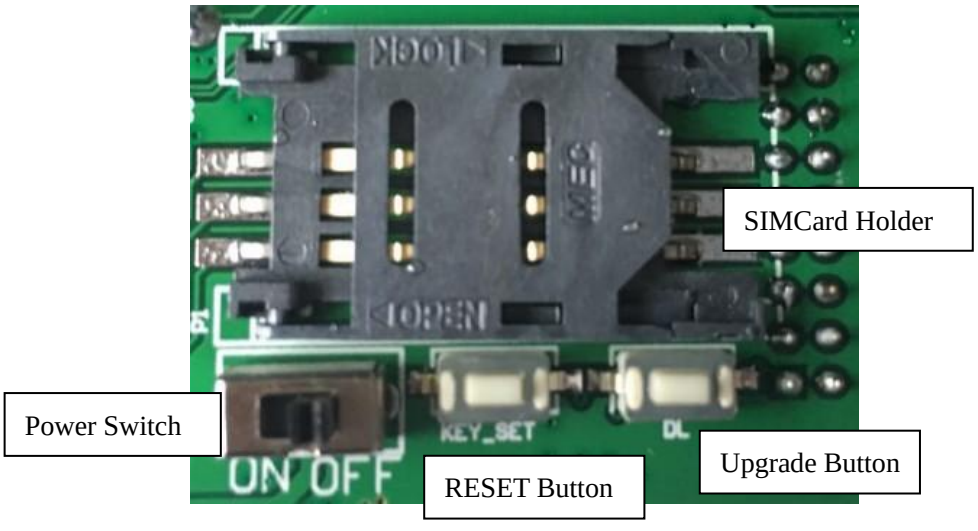


Interface Instruction

12pin Connector Interface Definition	
DC In 9~36V	+, DC9~36V positive input, 1.5A, for power on the Unit;
	-, DC9~36V negative input, 1.5A, for power on the Unit;
USB	USB interface, used it to communicate with the computer.
Antenna	GSM Antenna, 50Ω SMA female interface
DC Out 9~36V	+,DC Power Positive output, the output voltage equal to DC Input voltage
	GND, DC Power Negative output
DIN	1+, Digital input, positive. Can be used as pulse counter input.
	GND, negative.
TTL	Tx, Transmit data port
	Rx, Receive data port
	GND
RS485/RS232	RXD/B-:Data serial port, RXD for RS232, Data/B- for RS485
	TXD/A+:Data serial port, RXD for RS232, Data A+ for RS485
	GND: Signal GND
LED Status Description	
	Cellular indicator, registering cellular Network flicks quickly, registered successful will 2seconds flick once.
DATA	Power On the Modem, the Led will flicks 1-2seconds. Then OFF stands for no data transmission over the Com port; ON stands for transmitting data over Com port.
Power	OFF stands for power off; ON stands for anomaly.

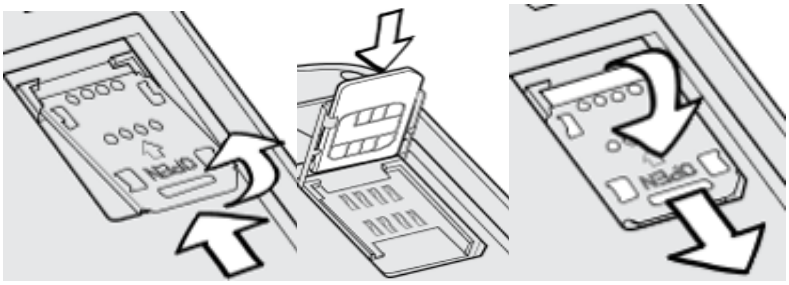
5.3 Interface Instructions for installation

At the backside of the panel, please use the tool to remove the screw, and you can see the below:



1) Insert SIMCard

Slide the SIM card holder in the direction of “OPEN” (etched on the SIM card holder), and then flip it open. Then Insert the SIM card with its gold contacts facing down and its cut-off corner facing out the SIM card slot. See below photo. Close the SIM card holder and then slide it in the opposite direction of “OPEN” to lock it. See above photo.



6. Initialize/Reset the unit

The Unit can be reset to factory default once mistake programmed. Please follow below steps to initialize it. After initialized, the parameters will set as factory default.

1) Switch off the Unit
2) Press and hold the RESET button;
3) Switch the Power Switch to ON side to powered on the Unit, holding 5 seconds, then loose the RESET Button.
4) Restart the unit then recovery to factory default settings, and will enter to work mode.

7. Programming and Operation

The GSM/GPRS/3G/4G IoT M2M Modem DTU user-friendly design. The user can setup it by the PC Configuration through USB cable, and upgrade firmware by USB port. Also can be configured some basically parameters by SMS Commands, please refer to **Chapter 8.**

Tips!

1) Please insert the SIM Card firstly, and install the GSM/3G/4G Antenna, please power on to check the LEDs status according to above mentioned LED Definitions, keep switch on it during the programming.

2) The PC Configuration in the CD, please click it to run it. Also can download from www.GPRS-M2M.com under D223 page directly.

Below are the steps to setup the parameters by PC Configuration, please follow it step by step.

Start to Configure:

Step1: Install the Configurator

The Configurator in the CD or download from www.GPRS-M2M.com, then installs it on the computer.

Step2: Connect attenna

Please insert the SIM Card, and install the GSM/3G/4G Antenna.

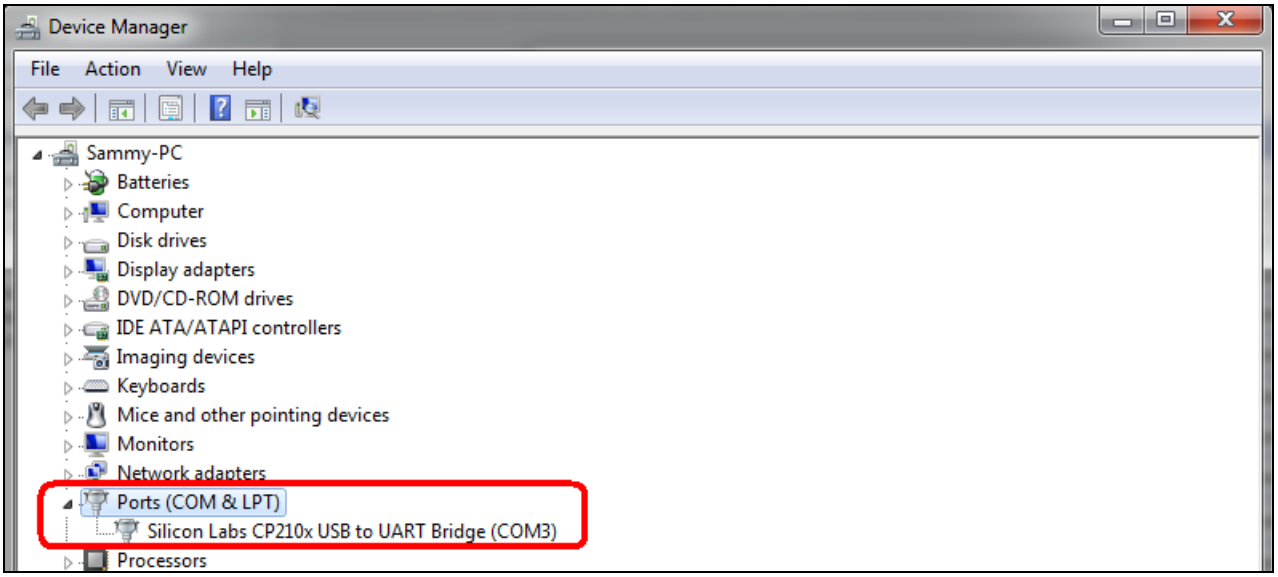
Step3: Connect to computer & External DC Power

Please contact the DTU to the PC by USB Cable. And connect the external DC Power 9~36V to DC in 9~36V Ports, then switch the power switch to ON side at the backside of unit, then can power on the device.

Step4: Install USB Drvier

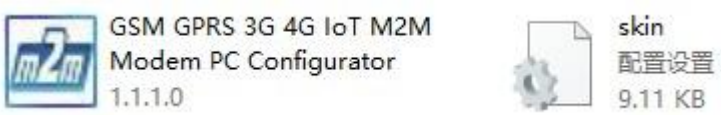
Install the USB Driver to the computer from the CD firstly. When successful, it can be found out at the device manager of the XP or Windows 7 or Win8/Win10, please see the below photo. Also, the driver for different OS can be downloaded from Silicon Laboratories, Inc. http://www.silabs.com , the

model is CP210x.



Step5: **Run the Configurator** (Compatible with Windows XP/7/8/10)

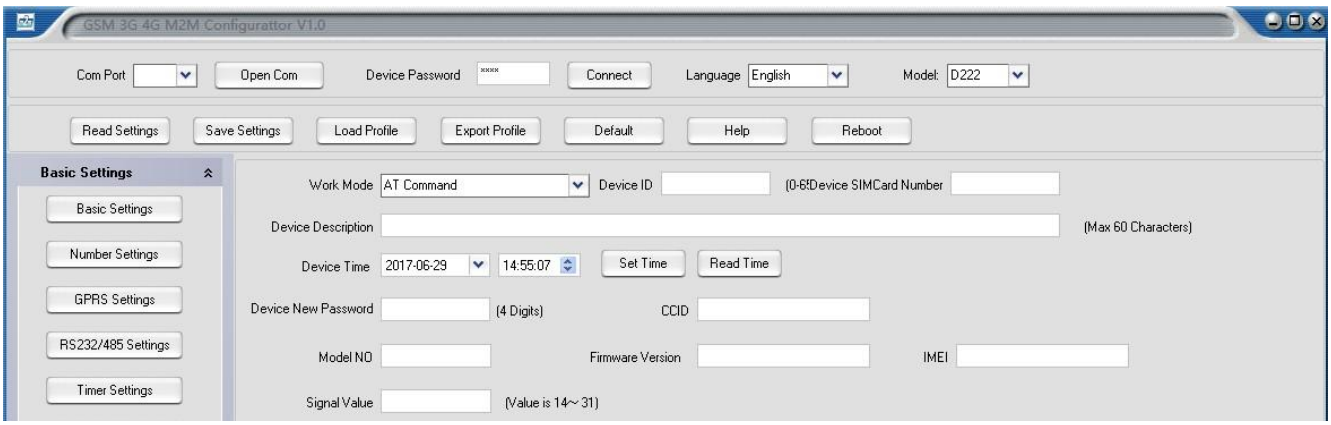
Tips: *In some computer, it required download net framework 4.0 while installation, then please click "Yes" to go to Microsoft website to download this service pack.*



Step5: **Choose the correct "COM port", then click "open Com port", enter the password(default is 1234),click the "Connect", after that, then can start to programming**

Details please check the picture as below:

Basic Settings



Open Com port: Click it to open the Comport after choose the correct com port;

Connect: Click it to connect the device to PC after enter the correct password;

Language: Click it to choose English or Chinese;

Model Number: This is model number, will update model number automatically when connect successfully;

Read Settings: Click it to read all of the current configuration parameters from the Modem;

Save Settings: Click it to save all of the PC Configurator parameters to the Modem;

Load Profile: Click it to load additional Profile to the PC Configurator;

Export Profile: Click it to save the present configuration parameters as a profile for next Modem

configuration or backup the parameter settings;

Tips: *The Load Profile and Export Profile is very useful while you need to program bulks of Modem with similar parameters. After programmed the first unit then you can export profile to save it, for the second Modem then you can load profile directly to save you time.*

Default: Click it to recovery the parameters to factory defaults;

Reboot: Click it to reboot the Modem;

Help: Click it to the help page;

Work Mode: To choose the Modem work mode, includes: AT Commands, SMS Transparent Transfer, Data Transparent Transfer, Modbus TCP;

Tips:

AT Command Mode: *The user can connect the Modem to the PC by USB/TTL/RS485/RS232, and send AT Commands by Hyper Terminal or other tools. If use the RS485/rs232 port, please setup the properly Com port parameters, if use the USB port, then please note, the USB parameters must be: 115200, 8,None,1. Or use the PC configurator AT Command Debug tool directly.*

SMS Transparent Transfer Mode: *This function is very useful to use SMS to read or write the remote device. E.g.: Meter, ATM. The SMS content only support 0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F., the SMS format is: %command%. After the Modem receive the command, will remove the beginning and end %, then transmit the command to the device through RS232 or RS485, after the device response, the data string will return to the mobile phone. See below example.*

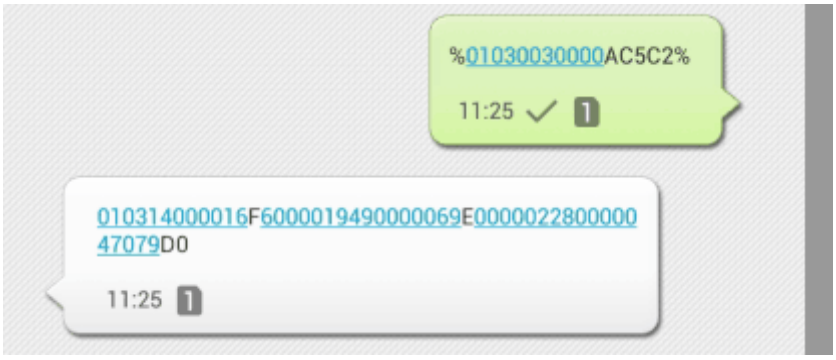
The device is a Modbus RTU Slave, connect to Modem by RS485, then use mobile phone send Modbus RTU command: %01030030000AC5C2%

01: Device ID, 03: Function Code, 0030: Register Start add, 000A: Register quantity, C5C2: CRC Check bit.

Then the device will return: 010314000016F6000019490000069E000002280000047079D0

01: Device ID, 03: Function Code, 14: Byte quantity, 000016F6000019490000069E0000022800000470: Register Value, 79D0: CRC check bit.

See below:



Data Transparent Transfer Mode: *this function is very useful to transmit any data via GPRS/3G/4G network, the data string will not any change while the whole transmission between the Server and Com Port device. It is use to create a wireless communication tunnel for data communication.*

Modbus TCP Mode: *This is very useful for SCADA, OPC or any other monitoring center that using Modbus TCP protocol. The Modem connects to the Modbus RTU Slave by RS485 or RS232, and it performs the Modbus RTU converter to Modbus TCP and transmit the data to the Modbus TCP server.*

Device ID: (0~65535) non-necessary. This is mainly for monitoring center to identify the Modem, if the application no needs to identify the data logger, and then no need to fill in it;

Device SIMCard Number: Fill it in order to receive SMS, should include country code, e.g.: 0044;

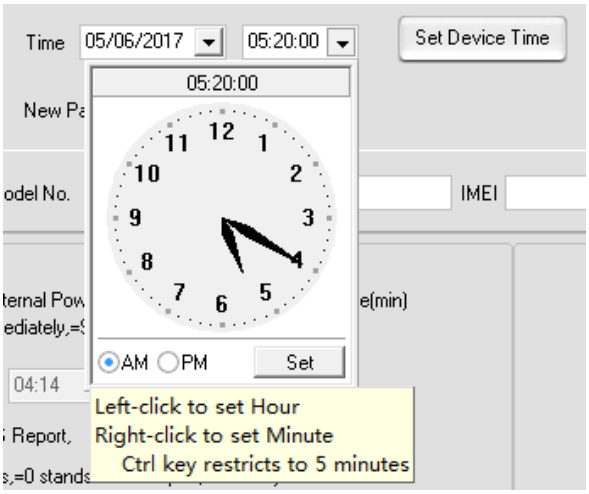
Device Description: This is the description of the modem, will add this description while inquiry or

daily report by SMS, e.g.: installation address, usage instructions and so on;(Max: 60 Characters)

Read Device Time: Click it to read the device time.

Set Device Time: Click it to save the time into the device after adjust the time.

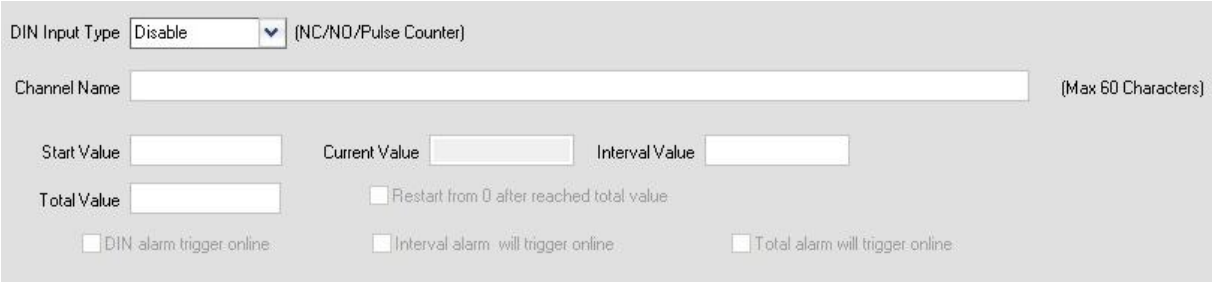
(Left-Click to set Hour, right-click to set Minute, Ctrl key restricts to 5 minutes)



Change Password: to change a new password. (4 Digits, Arabic numerals only)

CCID: Simcard's CCID, automatically read from the SIMcard if it supports to read out;

Device Version: to display the Model No./Firmware Version/IMEI Code/Signal Value;



DIN Input Type: Multi-functional input, .see below definitions, supports Dry Contact NC or NO, Wet Contact: 0-0.5VDC stands for close, 3-30VDC stands for Open, pulse counter.

1) When the Modem set as **SMS Transparent Transfer Mode**: The DIN change status, or when it be used as Pulse Counter, if the pulse counter reach the interval value or total value, will send pre-set SMS to the user's mobile phone to alert. The Alarm SMS Content is below:
   Used as DIN, Alarm SMS Content:

   Channel Name
   Colse/Open;Normal/Alarm

   Use as Pulse Counter, Alarm SMS Content:

   Channel Name
   Interval Alarm! [Total Alarm!]
   Start Value is:
   Current:
   Interval:
   Total:

2) When the Modem set as **Data Transparent Transfer Mode**: The DIN change status, or when it be used as Pulse Counter, if the pulse counter reach the interval value or total value, can enable it to trigger the modem online to transmit data over GPRS/3G/4G network. But will not send

pre-set SMS to the user's mobile phone to alert. This is very useful for read the smart meters that equipped pulse output.

3) When the Modem set as **AT Command or Modbus TCP Mode**: The DIN input is useless.

Channel Name: the SMS contents that when DIN trigger or Pulse counter alarm.

Start Value: Pulse counter start value;

Interval Value: Pulse counter interval value;

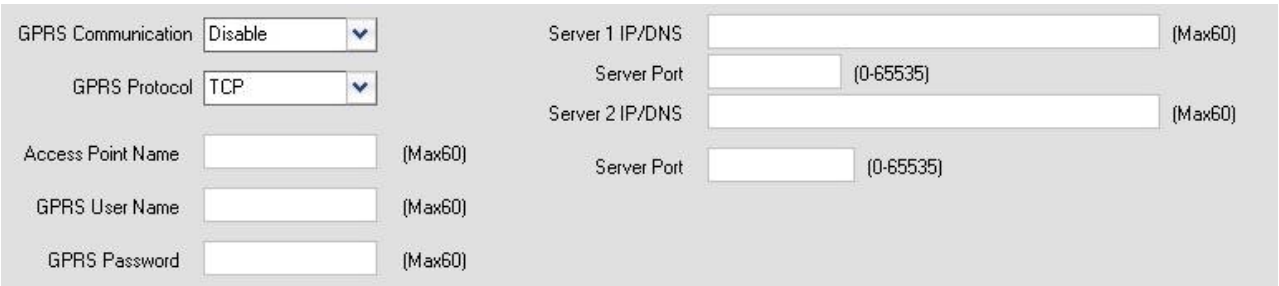
Total Value: Pulse counter total value.(Max 999999)

Number Settings

Alarm Tel Number: Set the alarm receiver numbers, please includes the country code, e.g. in China is 0086, input 008613570810254, if cannot received the SMS or dial, then try to set as +8613570810254, but cannot be 8613570810254. Also, some GSM/3G Operators not required input country code, so please remove country code, e.g. in China is 0086, and China Mobile not required country code, so can set as 13570810254.

All: Tick it stands for enable all of options in this line.

GPRS Settings



This Page is for setup the GPRS/3G/4G online parameters, GPRS/3G/4G Transport data protocol and Server information. Only when you have Server or need to use GPRS/3G/4G to transmit data then need to setup these parameters. As a professional data transfer unit, the modem provides

powerful and programmable functions to the data strings format, see below：

GPRS Communication: Click it to Disable or Enable.If you need GPRS/3G/4G data transfer, please enable it;

GPRS Protocol: TCP or UDP, if you setup it as Modbus TCP, please choose TCP.

Access Point Name: GPRS Access Point Name, provided by GSM/3G/4G Operator.

GPRS User Name: GPRS User Name, provided by GSM/3G/4G Operator.

GPRS Password: GPRS Password, provided by GSM/3G/4G Operator.

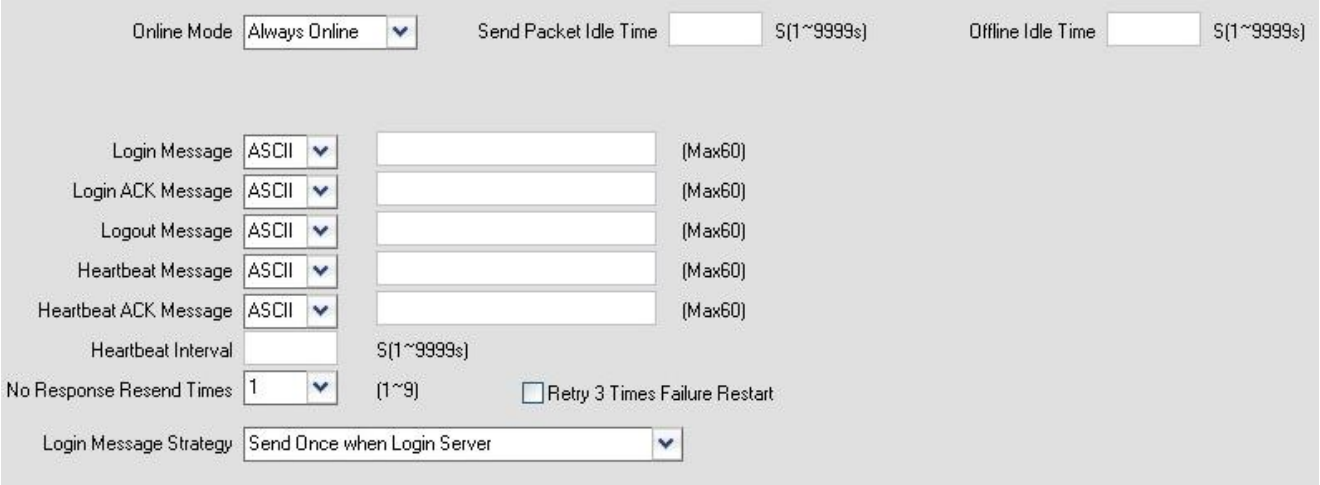
Server 1 IP or DNS: Stands for server 1 DNS or server IP address;

Server 1 Port: Stands for Server 1 Virtual Port.

Server 2 IP or DNS: Stands for server 2 DNS or server IP address;

Server 2 Port: Stands for Server 2 Virtual Port.

Tips: *The Modem will start to create connection with the Server 1, if failure, then will create connection with to Server 2, if Server 2 failure, will re-create connection with to Server 1 again. Total 3 cycle to create connection with each server. If still failure, then will offline and send SMS to alert the users.*



Online Mode: Always Online or Event online.

Always Online: Stands for once the unit power on, will automatically online.

Event Online: Stands for DIN trigger, Pulse Counter trigger, Timer, TTL or RS485 or RS232 com port transmit data to Modem, will trigger the Modem online.

Send Packet idleTime: Stands for timeout, no new data add to the string, will packet it and send out.

Offline idleTime: Stands for timeout, no new data transmission, will offline.

Login Message: Stands for programmable Login message to the server;

Login ACK Message: Stands for programmable Login ACK message to the server;

Logout Message: Stands for programmable Logout message to the server;

Heartbeat Message: Stands for programmable GPRS/3G/4G heartbeat content;

Heartbeat ACK Message: Stands for programmable GPRS/3G/4G heartbeat ACK content;

Heartbeat Interval Time: GPRS keep online heartbeat interval time.

No Response Resend Times: Stands for setup the Modem resend times if the sever no response the Login message and Heartbeat ACK Message.

Retry 3 Times Failure Restart: Tick it stands for setup the Modem resend 3 times if the sever no response the Login message and Heartbeat ACK Message, then restart the GPRS/3G/4G module, not restart the modem.

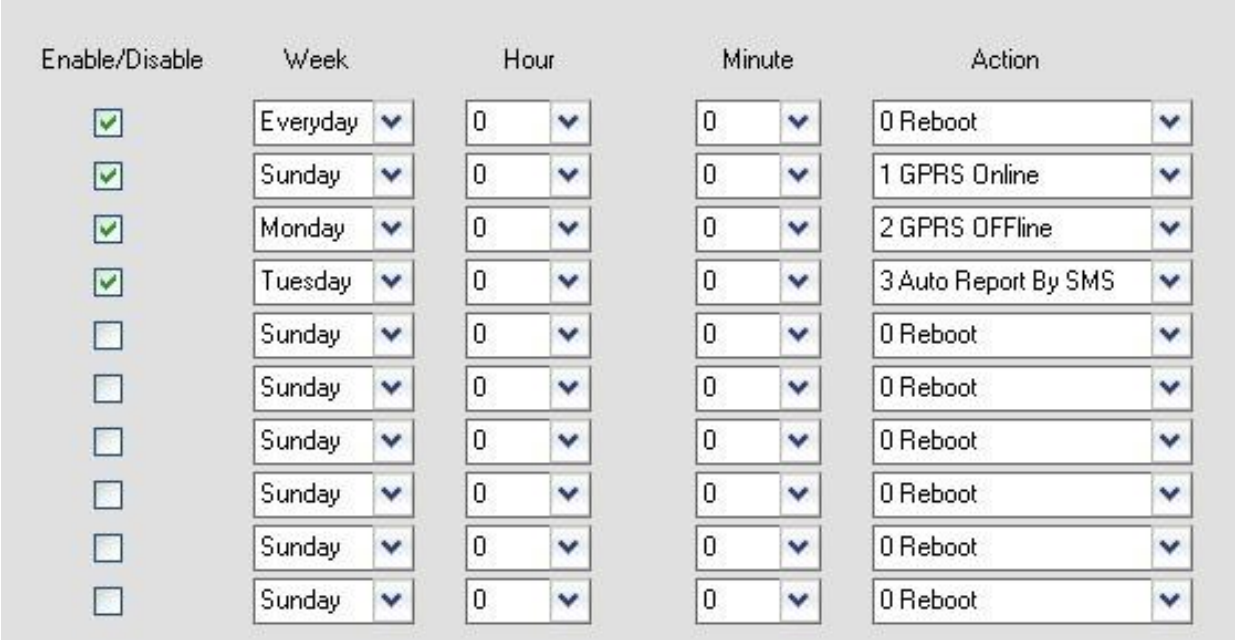
Login Message Strategy: Stands for programmable login strategy.

Serial Port Settings

The Modem support RS485 or RS232, default is RS485, the user can change it to RS232 by open the cover to adjust the RS232-RS485 switch.

The RS232/485 can be used to connect Modbus RTU slave or other device that equips RS232/RS485 serial port. And please setup the same abovementioned parameters as the device.

Timer Settings

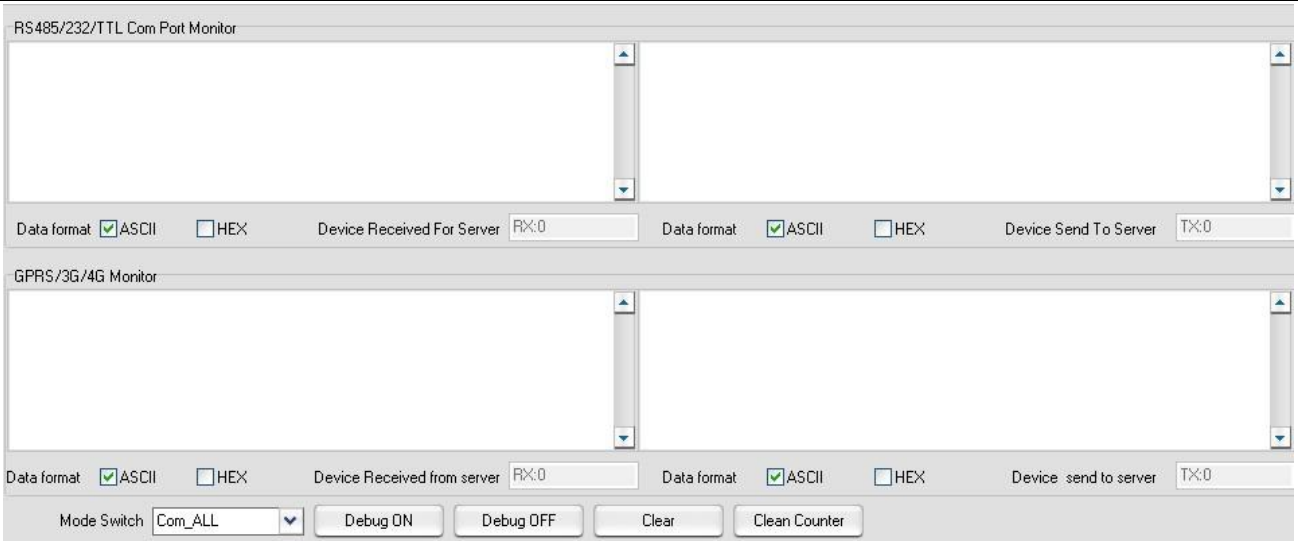


This page is for setup daily timer, it is useful for scheduling when to execute what action automatically. Total can program 10 scheduling events. Tick it stands for enable this timer event:

Weekly+Hour+Minute: Stands for when does the modem should execute the action.

Action: Stands for what action does the modem should to execute at the specified time.

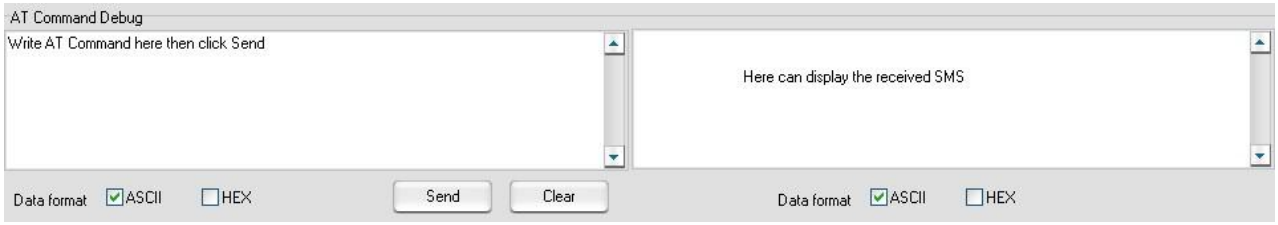
Debug Tool and AT Command Tool



This page is for monitoring the data transmission status though TTL/RS232/RS485 and GPRS/3G/4G, please choose the Mode Switch to monitoring the related channel, then click

button to start monitoring the data transmission. Finished then please click the

Button to close it.



This is the AT Command debug tool, the user can enter AT Command then click Send button to send out the AT commands.

Start to testing or work

Step1: In order to save you time to program it, please click Export Profile to save these configurations as a profile for backup, or for programming lots of data loggers.(Load file for programming can save lots of time)
Step2: Exit the Configuration, remove the USB cable, and reboot the data logger.
Step3: After the reboot the data logger, refer to the **LED Definitions** to check if it work good or not.

8.SMS commands

Notice:

1. *The default Password is **1234**.*
2. *The unit cannot support PIN Code Protected SIMCard.*
3. *You can program the unit with SMS commands using your phone.*
4. *Remember that commands must be **CAPITAL LETTERS**. It is PWD not pwd, CAP not Cap etc. Don't add spaces or any other character.*
5. *The **pwd** in the commands is means the password, when you use it, please in stand of it by the digital number; the capital letters **PWD** is the command letter, use PWD directly.*
6. *In some GSM operators they use different SMS parameter; the units can't return the SMS confirmation in some gsm operators, but it can performance the functions correctly. Also, you can try to add the country*

code before the number, see the below settings:

> ***For example:***
>
> E.g.: the country code is **0086**, or **+86**.
>
> The user cell phone number is **13600000000** and has been assigned as a SMS Alert number, the simcard number in the panel is **13512345678**.
>
> When you setup the number as the authorized number, please setup as 008613600000000 or +86136000000000. Not 13600000000.

7. *If the password is correct but the command is incorrect, the Modem will return:* **SMS Format Error, Please check Caps Lock in Command!** *So please check the Command, or add the country code before the telephone number or check the input is in ENGLISH INPUT METHOD and CAPS LOCK. If password incorrect then will not any response SMS.*
8. *Once the Modem received the SMS Command, will return SMS to confirmation, if no SMS return, please check your command or resend again.*
9. *The SMS commands that you will certainly use in the Mdoem are the following:*

SMS Commands For Program and Operation the Modem

1) Setup system Time

Command		Return SMS	Example
Setup	PWD+DyymmddThhmm	xx(Y)XX(M)XX(D)xx(H)X(M)	1234D20170510T1258
Inquiry	PWD+D	xx(Y)XX(M)XX(D)xx(H)X(M)	1234D

2) Modify Password(4digits, Default is: 1234)

Command	Return SMS	Example
PWD＋P＋new password	[new password],This is the New Password, please remember it carefully.	1234P4321 stands for change password from 1234 to 4321

3) Armed or Disarmed (After power on it is in Disarmed Mode)

Command		Return SMS	Example
Armed	PWD+AA	Armed	Armed stands for while alarm occurrence, should send SMS or dial to alert users,
Disarmed	PWD+BB	Disarmed	Disarmed stands for while alarm occurrence, will not send SMS or dial to alert users.)

4) Setup Device ID Number

SMS Command		Return SMS Content
Setup	PWD + IDxxxxx xxxxx=1~65535. Default is 1.	ID:XXXXX
Inquiry	PWD +IDE	ID:XXXXX

5) Inquiry Current Status SMS command

SMS Command	Return SMS Content
PWD+EE	Time Device ID: GSM Signal Value: Channel Name: Colse/Open;Normal/Alarm/

	[Start Value is: Current: Interval: Total:] Model: Version: Device Description:

6) Setup 10 User Number, max 21 digits. (Return 1~5 or 6~10 separately while setting.)

SMS Command		Return SMS Content
Setup	PWD＋A＋series number+T+tel number Notice: Series number = 01~10	Tel1: --- Tel2: --- Tel3: 008613570810254 Tel4: --- Tel5: ---
Inquiry	PWD +A	Return all numbers
Delete	PWD +A+series number	Return 1~5 or 6~10 numbers.

7) Reboot/Reset By SMS

SMS Command		Return SMS Content
Reboot	PWD+REBOOT	Restart the device
Reset	PWD+RESET	Recovery the settings to factory default parameter.

8) Setup the Server 1 Parameter (Cannot Setup the DNS by SMS)

SMS Command		Return SMS Content
Set Server IP	PWD+IP+ IPaddress+*+Server port	Server: Port:
Inquiry	PWD+IP	Server: Port:
Delete	PWD+IPDEL	Server: Port:

9) Setup the Server 2 Parameter (Cannot Setup the DNS by SMS)

SMS Command		Return SMS Content
Set Server IP	PWD+IPB+ IPaddress+*+Server port	Server: Port:
Inquiry	PWD+IPB	Server: Port:
Delete	PWD+IPBDEL	Server: Port:

10) Setup the GPRS Parameter (APN/USER NAME/PASSWORD)

SMS Command		Return SMS Content
Set	PWD+AP+apn+#+username+#+userpassword (**Notice:**apn=access point name)	APN: User Name: Password:
Inquiry	PWD+AP	

Delete	PWD+APDEL	

11) Wakeup GPRS Online

SMS Command	Return SMS Content
password+GPRSonline	GPRS/3G/4G Online

9. Technical specifications

Item	Specification
Working Voltage	normal mode: DC9V-36V , typical DC12V/1A
Power Consumption	Max:500mW, Standby:150mW , Average:180mW
Cellular Network	2G: 850/900/1800/1900Mhz 3G version Optional: (UMTS/HSDPA) W:900/2100@UMTS 900/1800@GSM; C:850/1900@UMTS 850/900/1800/1900@GSM; T:850/2100@UMTS 850/900/1800/1900@GSM; 4G LTE
Protocol	TCP,UDP,PPP,SMS, Modbus TCP
SIMCARD	3V
Anttena Connector:	SMA antenna,50ohm.
Receive Sensitivity	-102dBm
Working Temperature	Operation: -35～80℃ Restricted Operation: -35～-45℃
Storage temperature	-45～90℃
Related Humidity	＜85%(20±5℃),non-condense
Air Pressure	86～208Kpa
Digital input	1, Dry Contact NC or NO, Wet Contact: 0-0.5VDC stands for close, 3-30VDC stands for Open, pulse counter.
Data Com Port	3-Wires, RS232/485 Baud Rate optional 1200~115200bps,Default is RS485, Optional: RS232
TTL Port	GND, Tx, Rx
Configure Com Port	USB
Voltage Output	Provide DC power to external device, voltage =DC Input
Dimension	(L x W xH): 70mm x 88mm x 30mm
Net Weight	300g

10.AT Commands

The Modem supports AT commands, please contact us so that we can provide the latest version AT Commands to you.

11.Upgrade Firmware

The Modem supports upgrade firmware via USB port directly. If we upgraded the firmware functions of the data loggers, we will inform you to upgrade the firmware if you required. If there any new requirements of the present functions caused it should update the firmware, the user can upgrade them directly by USB port. If you required upgrade, please contact us to modify the firmware according to you requirements, and we will provide the upgraded firmware to you to upgrade them.

12.Warranty

1) This system is warranted to be free of defects in material and workmanship for one year.
2) This warranty does not extend to any defect, malfunction or failure caused by abuse or misuse by the Operating Instructions. In no event shall the manufacturer be liable for any alarm system altered by purchasers

*Abbreviation and Terms

1) APN :Access Point Name
2) ATM :Asynchronous Transfer Mode
3) BTS :Base Transceiver System
4) CSD :Circuit Switch Data
5) DDN :Digital Data Network
6) DHCP :Dynamic Host Configuration Protocol
7) DNS : Domain Name System
8) DSC :Data Service Center
9) DTU :Data Terminal Unit
10) EMC :Electro Magnetic Compatibility
11) GPRS :General Packet Radio Service
12) GSM :Global System for MobileCommunications
13) IP :Internet Protocol
14) IPv6 IP:IP version 6
15) RTOS :Real Time Operating System
16) SCADA : Supervisory Control and DataAcquisition
17) SIM:Subscriber Identify Module
18) TCP :Transmission Control Protocol
19) UDP :User Datagram Protocol
20) VPN :Virtual Private Network
21) WAN :Wide Area Network

The End!
Any questions please help to contact us feel free.
Http://www.GPRS-M2M.com