

# CM-GPRS User Manual V6.91





CM-GPRS is a wireless communication module adopts transparent transmission combined with GPRS. It can realize the connection between automatic system and GPRS and GSM used together with Coolmay PLC. Programming, diagnosing, uploading and downloading in a remote distance can be achieved through programming software. Cellphone users can control PLC through SMS messages. CM-GPRS can be particularly applied to distributed remote monitoring system.



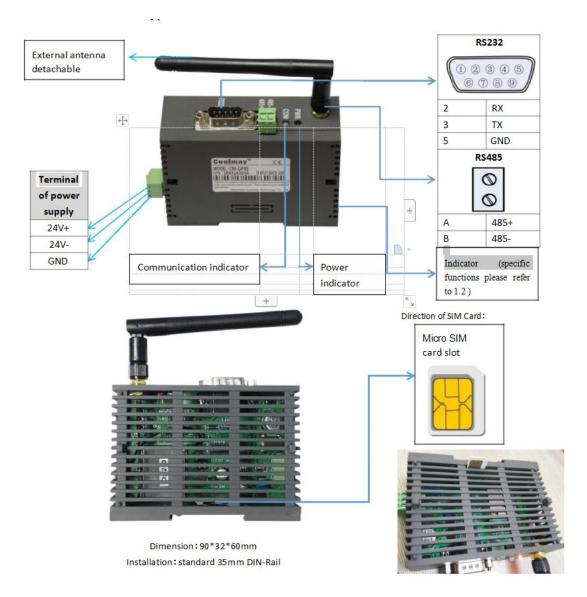
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# 1. Hardware introduction

## 1.1 Model and appearance







# **1.2. Indicator state**

CM-GPRS has five indicator pins, they are RUN, GPRS, LINKA, LINKB and DATA.

Name	Function	State
RUN	Working normally indicator	Flicker when the module is working
		well
GPRS	GPRS network connection indicator	Keep on when connect with GPRS
LINKA namely	Socket A connection indicator	Keep on when connection built
(LA)		
LINKB namely	Socket B connection indicator	Keep on when connection built
(LB)		
DATA namely DT	Data transmission indicator	Flicker when serial port network has
		data

# **1.3 Features**

1.GSM module can be globally used, support Unicom, GPRS of mobile, SIM card (MICRO type)

2. Industrial module adopted, stable performance, quality assured

3.Support automatically start when without data transmission for a long time

(Set less than 600s to disable automatic restart function)

4. Transparent data transmission

5.Standard industrial port (RS-232/ RS-485)

6.Support long time on-line mode, with bolt redial and heart beat function

7.Support local configuration

8.Support transmit-receive of message, support setting parameters remotely through messages (Setting parameters by message support password verification, which can prevent illegal users to set parameters or the bother of junk short message), support set parameters from a remote server (this function can be opened and closed).

## 1.4. Application area

© Industrial controlling, remote sensing, telemetering

©Unattended machine room and warehouse monitoring

© Pipeline network monitoring

©Oil field, coal mine data acquisition and monitoring

© Fault diagnosis of large scale equipment

Other occasions needs wireless data transmission



## 1.5. Parameters

	Item	Index	
	Wireless standard	GSM/GPRS/EDGE	
	Standard frequency range	850/900/1800/1900MHz Quad Band	
		GSM900 class4(2W)	
Wireless	Transmitted power	DCS1800 class1(1W)	
parameter	GPRS Terminal Device	Class Class B	
	GPRS Multi-slot Class GPRS	Class 10	
GPRS Coding Schemes		CS1~CS4	
	Antenna options	I-PEX port	
	Data interface	UART:2400bps~921600bps	
	Working voltage	DC 5~30V	
Hardware	Working current	Average: 55mA~90mA Max.: 750mA	
parameters	Working temperature	-25?~85?	
	Store temperature	-40?~125?	
	Dimension	90×60×32mm	
	Wireless networking type	GSM/GPRS/EDGE	
	Working mode	transparent transmission message HTTPD mode	
Software	Setting command	AT+ command structure	
parameters	Networking protocol	TCP/UDP/DNS/HTTP	
	Max. TCP linking number	2	
	User Configuration	Serial port AT command, message AT command	

# 2. Working mode

CM-GPRS has three working mode: Network transmission, HTTPD (not support by CM-GPRS currently), SMS transmission

### 2.1. Network transmission

In this mode, users' serial device can send data to the assigned server through CM-GPRS. CM-GPRS can receive data from the server and then transmit the message to serial port. Users only need to set simple parameters that transparent communication can be achieved instead of keeping an eye on the process of data conversion between serial port and network. CM-GPRS supports two socket connections, socket A and socket B, they are mutually independent. CM-GPRS module can only be TCP Client and UDP Client.

#### 2.2. SMS transmission

In this mode, user's serial device can send short messages to assigned cellphones, and can also receive short messages from any cellphone and then transmit them to serial devices.



Users only need to set simple parameters that communication between cellphones and serial devices can be achieved instead of keeping an eye on the process of data conversion between serial port and message.

#### Setting steps:

- 1. Connect Rs232 or Rs485 of CM-GPRS to computer, select the relevant port of USB to Rs232 or USB to Rs485. Baud ratesCheck/data/stopsflow control is the corresponding parameters inside CM-GPRS.
- 2. Select SMS transmission as working mode.
- 3. In parameters of SMS transmission, set assigned cellphone number which is used to receive messages as the target cellphone number.
- 4. In global parameters, set operator as Mobile or Unicom corresponding to the SIM card.
- 5. In serial parameters, set [Baud ratesParity /Data/Stop] as parameters in RS communication(EVEN/7/1). Set [Flow control] as NONE.
- 6. Click and access to [Enter configuration status], and then click [Set Save All Parameters].

7. Take coolmay PLC as an example: Data needs to be converted to ASCII while sending them to CM-GPRS RS instructions.

🙀 CM-GPRS V1.1.4.71	
File Language Help Current internal parameter of the module	
ComName COM5 - BaudRate 9600 - Parity/Data/Stop EVEN - 7 - 1	🕶 Flow MONE 👻 🛑 Open Serial
Connect to the serial port number of computer	Operation and Hints
🔿 Network Transmission 🕥 HTTPD Mode 💿 SMS Transmission	
Select mercade parethrough	node 🗟 Get All Faram 🛛 📳 Set Save All Param 🛛 Enter cfg status 🖉 Exit cfg status
短信息 ((((()))) 約(6.0) 出口教报	
	General operation process:
	1, Module connect to PC serial port;
Param of SMS Transmission	2, Open the serial port; 3, Get All Param;
	4, Choose work mode and configure related parameters;
	5, Set and Save All Param.
stination phone number	
Set the cellphone	
number assigned to	
send/receive message	
send/receive message	
Base Param	
APN code CMNET - "CMNET", ""	· · · · · · · · · · · · · · · · · · ·
Serial param Serial BaudRate 9600 - Flow NONE -	
Parity/Data/Stop NONE + 8 + 1 +	
	Send via Serial Port -
More Set according to RS communication parameters	Sense in S



# **3.Data transmission test**

## 3.1 Initial parameters

Serial parameter is default as: serial port is COM5 in this example, please set port number which is connected with CM-GPRS. Baud rate 9600; Parity EVEN; Data 7; Stop 1.

Defaulted working mode: network transmission

Defaulted sever for connection: Address: 120.76.116.193 or coolmay.wicp.net (standby), port: 25565 connection type: TCP long link.

Default to start registration packet: Transmit mode: send 1 to server when connect with server; registered data type: registered ID 3(Specific registered ID please refer to initial parameter settings, every registered number is marked on product label. If it not be saved, please ask Coolmay to provide it again)

#### 3.2 Data transmission testing steps

1.Take connecting with Coolmay PLC as an example. Insert SIM card to the slot inside CM-GPRS, a computer is needed to connect serial port with CM-GPRS in order to test data

transmission between serial port and network. Since some computer hasn't a RS232, thus a USB to RS232 (male) is needed to connect RS232 programming cable (both side is female), or a USB TO RS485 is needed to connect with RS485.

2.Open the setting software, after CM-GPRS is charged and started, if SIM card is inspected, it will automatically connect with GPRS and the server and then access to the working mode which had been set, the serial port will open as set. RUN light ON, then access to the next step after GPRS indicator and LA indicator ON.

3.After LA indicator ON, connect CM-GPRS with Rs232, click to acquire current parameters after serial port opened, check whether it is successfully connected, access to [Enter configuration status], set serial parameters and then click [Set Save All Parameters]. Finally, click and access to communication state, it is OK when OK prompts.

#### Note:

The above three steps have been set before shipment, this settings can connect with coolmay PLC, parameters should be modified if need to connect with PLC with other brands. Each CM-GPRS has a unique register ID, specific register ID please refer to initial parameter settings, register ID is marked in the product label, users also need to fill the corresponding register ID. If forget it, please ask Coolmay to provide it again.



🙀 CM-GPRS V1.1.4.71	
File Language Help Current internal parameter of the module	
ComName COM5 - BaudRate 9600 - Parity/Data/Stop EVEN - 7 - 1	🕶 Flow MONE 👻 🛑 Open Serial
Connection the serial port number of computer	peration and Hints
💿 Network Transmission 💿 HTTPD Mode 💿 SMS Transmission	
TCP/UDP 网络 TCP/UDP	🔁 Get All Param 🔚 Set Save All Param Enter cfg status Exit cfg status
PC 数据 数据 DTU 串口数据 串口终端 =	
G	eneral operation process: Module connect to PC serial port;
Prove of Wateriah Terrentianian 2,	Open the serial port;
Server address Port number 3,	,Get All Param; ,Choose work mode and configure related parameters;
	Set and Save All Param.
Link type TCP - Long -	
Enable NetB	
Enable	
heartbeat	
package Reg package data type Regis: - 64847	
Enable USR D2D ID	
62,942	
Base Param	
APN code CMNET - "CMNET", "", ""	
Serial param Serial BaudRate 9600 - Flow NONE -	
Parity/Data/Stop EVEN - 7 - 1	
	Send via Serial Port - 🧐 Send -
More Parameters need to be set	

CM-GPRS V1.1					×-
File Language	Help				
ComName COM5	▼ BaudRate 9600	<ul> <li>Parity/Data/Stop EVE</li> </ul>	N • 7 • 1	🗸 🔻 Flow NONE 👻 🔳 Close Serial	
Choose Work Mode	e			Operation and Mints	
	smission ● HTTPD M PUDP 网络 TCPA 发展 数据	JDP	ansmission 申口终端	G Get All Paren Set Save All Paren Enter ofg status Exit ofg status	•
Param of Network	k Transmission			AT+UART=9600, "EVEN", 7, 1, "NOME"	
📝 Enable NetA	IP&Port	120. 76. 116. 193	25565	ОК	
	Link type	TCP	Long 🗸	AT+APN="CMNET", "", ""	
📄 Enable NetB				AT+APN="CMNET", "", ""	
				OK	
Enable heartbeat				AT+CLOUDEN="off"	
				AT+CLOUDEN="off"	
	12			OK	
Enable register package	Reg package send type Reg package data type	Send register data when . Regist - 64847		AT+S	
Enable USR	web bacwage care chie		-	AT+S	
Cloud					
				OK	
Base Param				Operation complete	
APN code	CMNET -	MNET", "", ""		The statement of the st	=
Serial param	Serial BaudRate 96		ione 👻		
	Parity/Data/Stop EV	EN 🕶 7 💌 1	•		
More				Send via Serial Port • 🔍 Send •	



4. Install virtual serial port software, add virtual serial port.

Virtual COM:	COM2 🚽
Net Protocol:	TCP Client
Remote IP/add	r. 120.76.116.193
Remote Port:	25565
Local Port:	8233
Remarks:	
📀 ок	Cancel Advanced
Use D2D	
Register ID	43589 (?
Use USR CLOU	D

#### Note:

Net protocol select TCP Client;

Remote IP/ address set 120.76.116.193 or

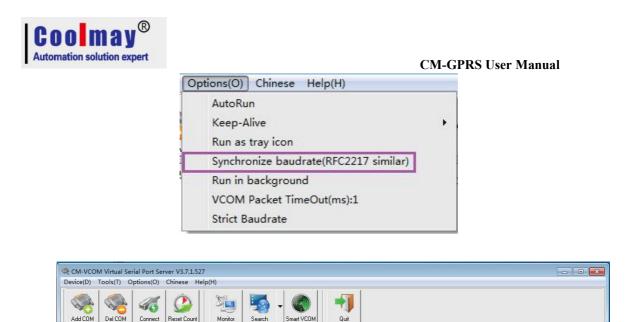
 $coolmay.wicp.net \ref{eq:standby3} (Note: Remote IP\!/ address is Coolmay$ 

domain name, must link with Coolmay server.

Remote port set 25565;

Set [Register ID] in [Advance] 43589. (Specific register ID please refer to initial parameter settings, every register number is marked on product label. If it not be saved, please ask Coolmay to provide it again)

Successfully created as below image, and then modify [Synchronous baud rate] as [not chosen].



 Remote Port
 Local Port
 COM Received
 Net Received
 Net State

 25565
 0
 0
 0
 0
 0
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 0
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Reg ID CloudID

5. In this demo program, virtual serial port is COM2, PLC program software needs to connect with COM2, thus program downloading and monitoring remotely can be achieved. Note: PLC software must be GX8.52 or WORKS 2, meanwhile communication time inspection must above 20s and retry time above twice that it can be successfully linked.

COM State Net Protocol Remote IP Not used TCP Client 120.76.116.193

COM Name Parameters

Remarks