

F1103 GPRS MODEM

USER MANUAL





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Chapter 1 Brief Introduction of Product

1.1 General

F1103 GPRS MODEM is a kind of cellular terminal device that provides SMS, dial-up and CSD function by public GPRS network.

It adopts high-powered industrial cellular module and supports RS232 port that can conveniently connect one device to a cellular network, allowing you to connect to your existing serial device.

It has been widely used on M2M fields, such as intelligent transportation, smart grid, industrial automation, telemetry, finance, POS, water supply, environment protection, post, weather, and so on.



1.2 Features and Benefits

Design for Industrial Application

- High-powered industrial cellular module
- Housing: iron, providing IP30 protection.



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Power range: DC 5~35V

Stability and Reliability

- RS232 port: 15KV ESD protection
- SIM/UIM port: 15KV ESD protection
- Power port: reverse-voltage and overvoltage protection
- Antenna port: lightning protection(optional)

Standard and Convenience

- Support standard RS232 port that can connect to a serial device directly
- Provide dial-up software that can make it always online
- Provide SMS tool software
- Support standard AT command

High-performance

- Support SMS, dial-up and CSD function
- Support APN/VPDN ٠

1.3 Working Principle



The principle chart of the MODEM is as following:

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	protection(optional)
SIM/UIM	Standard 3V/1.8V user card interface, 15KV ESD protection
Power	Standard 3-PIN power jack, reverse-voltage and overvoltage
	protection





Power Input

Item	Content
Standard Power	DC 12V/1.5A
Power Range	DC 5~35V
Consumption	<200mA (12V)

Physical Characteristics

Item	Content
Housing	Iron, providing IP30 protection
Dimensions	91x58.5x22 mm
Weight	195g

Environmental Limits

Item	Content
Operating	-25~+65°C (-13~+149°F)
Temperature	
Extended	-30~+75°C (-22~+167°F)
Operating	



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1.4 Specifications

Cellular Specification

Item	Content
Cellular Module	Industrial cellular module
Standard and	EGSM900/GSM1800MHz,
Band	GSM850/900/1800/1900MHz(optional)
	Compliant to GSM phase 2/2+
	GPRS class 10, class 12(optional)
Bandwidth	85.6Kbps
TX power	GSM850/900: <33dBm
	GSM1800/1900: <30dBm
RX sensitivity	<-107dBm

Interface Type

Item	Content
Serial	1 RS232 port, 15KV ESD protection
	Data bits: 5, 6, 7, 8
	Stop bits: 1, 1.5, 2
	Parity: none, even, odd, space, mark
	Baud rate: 110~230400 bps
Indicator	"Power", "ACT", "Online"
Antenna	Standard SMA female interface, 50 ohm, lighting



Temperature	
Storage	-40~+85°C(-40~+185°F)
Temperature	
Operating	95% (Non-condensing)
Humidity	

Chapter 2 Installation Introduction

2.1 General

The MODEM must be installed correctly to make it work properly. Warning: Forbid to install the MODEM when powered!

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2.2 Encasement List

Name	Quantity	Remark
MODEM host	1	
Antenna	1	
Power adapter	1	
RS232 data cable	1	
Manual CD	1	
Certification card	1	
Maintenance card	1	

2.3 Installation and Cable Connection

Dimension: (unit: mm)





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Installation of SIM/UIM Card:

Firstly power off the MODEM, and press the out button of the SIM/UIM card outlet with a needle object. Then the SIM/UIM card sheath will flick out at once. Put SIM/UIM card into the card sheath (Pay attention to put the side which has metal point outside), and insert card sheath back to the SIM/UIM card outlet.

Warning: Forbid to install SIM/UIM card when powered!

Installation of antenna:

Screw the SMA male pin of the antenna to the female SMA outlet of the MODEM tightly. Warning: The antenna must be screwed tightly, or the signal quality of antenna will be influenced!

Installation of cable:

てい

Insert DB9F end of the RS232 data cable into the DB9M interface of MODEM, and connect the other end with user's device.

The signal connection of the RS232 data cable is as follows:



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2.4 Power

The power range of the MODEM is 5~35V.

Warning: When we use other power, we should make sure that the power can supply power above 4W.

We recommend user to use the standard DC 12V/0.5A power adaptor.

2.5 Indicator Lights Introduction

The MODEM provides three indicator lights: "Power", "ACT", "Online".

Indicator	State	Introduction
Light		
Power	ON	MODEM is powered on
	OFF	MODEM is powered off
ACT	BLINK	Data is communicating
	OFF	No data
Online	ON/	MODEM has logged on network
	BLINK	
	OFF	MODEM hasn't logged on network

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Chapter 3 Dial-Up Settings

3.1 MODEM Connection

Connect Modem and PC with the shipped RS-232 cable as following:



3.2 Dial-Up Settings

1. Press "start" → "Settings" → "Control Panel", Double click "Phone and Modem Options"



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Choose "Modems", Press "Add" button 2.





3. Choose "Don't detect my modem; I will select it from a list", and click "Next"

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4. Manufacture choose "Standard Modem Types", Models choose "Standard 33600 bps Modem", click "Next" button



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Install New Modem	
	Ser and a series of the series
Select the manufacturer ar have an installation disk, c	nd model of your modern. If your modern is not listed, or if you lick Have Disk.
Manufacturer	Models
[Standard Modern Types]	Standard 19200 bps Modem
c c	Standard 33600 bps Modem
This driver is digitally signed. <u>Tell me why driver signing is imp</u>	Have Disk

5. "Selected ports" choose the actual COM port which connects to Modem, click "Next" button.

Select the poly	s) you want to install the modern on.
	You have selected the following modem:
870	Standard 33600 bps Modem
	On which ports do you want to install it?
AL APPER	C All ports
	Selected ports
	COM1

6. click "Finish" button, return back to "Modems" page



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nstall New Modem Modem installation is	finished!
	Your modem has been set up successfully. If you want to change these settings, double-click the Phone and Modem Options icon in Control Panel, click the Modems tab, select this modem, and then click Properties.
	< Back Finish Cancel

ialian Bulan Modems	0 dumand	
	Ruvanceu	
The following n	nodems are installed:	
Modem		Attached To
Standard 33600 bps	Modem	COM1
	Add R	emove Properties

7. Choose the modem you have just installed, click "properties" button to configure the modem driver





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hone and M	odem Options		? 🔀
Dialing Rules	Modems Advanced		
ТР	ne following modems are	installed:	
Modem		Alleohed To	
Standa	rd 33600 bps Modem	COM1	
	Add	Remove Pro	operties
	ОК	Cancel	Apply

8. Choose "Modem" page, set Maximum Port Speed as 115200.

ener	Modem Diagnostics	Advanced	Driver	
Port:	COM1			
Spea	aker volume			
	Low	— Hij	gh	
	i	<u></u>		
Махі	mum Port Speed			
, right			<	
	115200			
Dial	Control			
	Wait for dial tone	before dialin	g	

9. Choose "Advanced" page, input Extra Initialization commands: AT+CGDCONT=1,"IP","CMNET", CMNET is the Access Point Name(APN) of China, please replace it with your own APN name, click "Change Default Preferences" button



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Standard 33600 bps Modem Properties
General Modem Diagnostic Advanced Driver
Extra Settings
Extra initialization commands:
AT+CGDCONT=1,"IP","CMNET"
Change Default Preferences
OK Cancel

10. "Port Speed" choose 115200, "Flow control" choose None, click "OK" button.

aeneral	Advanced		
- Call p	references —		
	Disconnect a	call if idle for more than	mins
	Cancel the ca	all if not connected within	secs
Data	Connection P Port speed	references	D
Data	Connection P Port spees Data Protocol	115200	
- Data	Connection P Port speed Data Protocol Compression	115200	D]

11. On the "Advanced" page, click "OK" button return to "Phone and Modems" page, click "OK" button to finish the Modem driver installation



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tandard 33600 bps Modem Properties	Phone and Modem Options	?
eneral Modem Diagnostics Advanced Driver	Dialing Rules Modems Advanced	
Extra Settings Extra initialization commands:	The following modems are installed:	
AT+CGDCONT=1,"IP","CMNET"	Modem Atta	ached To
	Standard 33600 bps Modem COM	41
Change Default Preferences OK Cancel	Add Remove	Properties
		el Anniu

12. Finish installing Modem driver, It's necessary to install the Dial-Up connection. Open "Control Panel", double click "Network connections"



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13. Click "Create a new connection" to start creating a new Dial-Up connection.



14. Click "Next" button







15. Choose "Connect to the Internet", click "Next" button

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etwork Con	nection Type
What do y	nu want to do?
 Conne 	st to the Internet
Conne	t to the Internet so you can browse the Web and read email.
O Conne	ct to the network at my workplace
Conne a field	t to a business network (using dial-up or VPN) so you can work from home, Iffice, or another location.
🔿 Set up	a home or small office network
Conne	t to an existing home or small office network or set up a new one.
O Set up	an advanced connection
Conne set up	t directly to another computer using your serial, parallel, or infrared port, or his computer so that other computers can connect to it.
	(Back Next) Cancel

16. Choose "Set up my connection manually", click "Next"

w cor	mechon wizaru
Gettir	ng Ready
TI	he wizard is preparing to set up your Internet connection.
Н	ow do you want to connect to the Internet?
	O Choose from a list of Internet service providers (ISPs)
<	Set up my connection manually
	For a dial-up connection, you will need your account name, password, and a phone number for your ISP. For a broadband account, you won't need a phone number.
	○Use the CD I got from an ISP
	< Back Next > Cancel

17. Choose "Connect using a dial-up modem", click "Next"





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18. Choose the Modem driver installed just now, click "Next" button

elect a Device		~
This is the device that wil	I be used to make the connection.	
You have more than one	dial-up device on your computer.	
Select the devices to use	in this connection:	
🗆 🎒 Modem - Standar	d 33600 bps Modem #2 (COM3)	
CIM 😒 Modem - Standar	d 33600 bps Modem (COM1)	
		1

19. Input the ISP Name, click "Next" button





Connection Name What is the name of the	he service that provides your Internet connection?
Type the name of your I	ISP in the following box.
ISP Name	
The name you type her	e will be the name of the connection you are creating.

20. Input the access number of your ISP. In China, It is *99***1#. Click "Next" button.



21. Input the username and password. In china they are both null. Click "Next".

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New Connection Wizard
Internet Account Information You will need an account name and password to sign in to your Internet account.
Type an ISP account name and password, then write down this information and store it in a safe place. (If you have forgotten an existing account name or password, contact your ISP.)
User name:
Password:
Confirm password:
Use this account name and password when anyone connects to the Internet from this computer
Make this the default Internet connection
< Back Next > Cancel

22. Choose "Add a shortcut to this connection to my desktop", click "Finish" button.



23. Double click the Dial-Up shortcut on your desktop to run Dial-Up program.





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24. Click the "Properties" button of the Dial-Up program



25. Choose the Modem driver installed before, Click "Configure" button



GPRS_DIAL Properties	? 🛛
aeneral Options Security Networkin	g Advanced
Connect using:	
Modem - Standard 33600 bps N	1odem (COM1) 💦 🚮
🗆 🎒 Modem - Standard 33600 bps N	1odem #2 (COM3)
<	*
All devices call the same numbers	Configure
All devices call the same numbers	Conligure
Phone number	
Area code: Phone number:	
*99***1#	Alternates
Country/region code;	
	~
Use dialing rules	Dialing Bules
Show icon in natification area when	connected
Show con in notification area when	connecteu
-	
L	OK Cancel

26. Set "Maximum Speed [bps]" as 115200, set Hardware features as following, click "OK" button

Modem Configuration	? 🛛
Standard 33600 bps	Modem (COM1)
Maximum speed (bps):	115200
Modem protocol	× .
Enable modem compress	ntrol trol sion
Show terminal window	
Enable modem speaker	OK Cancel

27. Click "OK" button to finish Dial-Up program configuration



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Connect usin	ng: em - Standard 33600 bps em - Standard 33600 bps	Modem (COM1) Modem #2 (COM3)
<		
Area cod	e: Phone number: *99***1# egion code:	Alternates
Use d	ialing rules	Dialing Rules

28. Click "Dial" button to start dial

onnect GPR	S_DIAL	?
0		
User name: Password:		
Save this u Me only Anyone	ser name and password for the l	iollowing users:
Dial:	*99***1#	~
Dial	Canad Properties	

29. When dial success, There is a connection icon on the right of your taskbar.





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Chapter 4 SMS Test

Modem can also be used to send and receive SMS (Short Message Service) except setting up dial-up connection. To simplify customer program, we supply a DLL(Dynamic Link Library) and sample program source code, all the SMS operations can be processed through simple API functions. The following describes how to test the SMS function.

- 1. Connect PC and Modem with the shipped RS-232 cable and power on Modem, The connection diagram please refer chapter 3.1
- 2. Run FfSmsTestTool-En.exe



3. Choose the COM port which connect to MODEM, baud rate is 15200, click "Start" button

4. The tool will initiate Modem after clicking the "Start" button, If initiate success, the log column will show "Start Success", It's now ready for sending and receiving SMS.

YfSmsTestTool-V2.3	
Serial Parameters	
COM: COM1 V Baudrate: 115200 V Start Stop Clear	
Receive	
Start Success	-
<u></u>	
Send	
his is Four-Faith SMS Test Text	
Send	

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5. Input the phone to receive this test SMS, click "Send" button

6. The result state will display in the Log column

7. When received SMS, It will display in the receive column

8. Complete SMS test.

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Chapter 5 Appendix

The following steps describe how to setup Windows XP Hyper Terminal and send AT command to modem with it.

1. Press "Start" \rightarrow "Programs" \rightarrow "Accessories" \rightarrow "Communications" \rightarrow "Hyper Terminal"

Input connection name, choose "OK" 2.

- Connect To Enter details for the phone number that you want to dial: Country/region: United States [1] Area code: Phone number: Connect using: COM1 OK Cancel
- 4. Configure the serial port parameters as following, choose "OK"
 - Bits per second: 115200 Data bits: 8 Parity: None Stop bits: 1 Flow control: None

Choose the correct COM port which connects to modem, choose "OK" 3.

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COM1 Properties		? 🛛
Port Settings		
Bits per second:	115200	~
Data bits:	8	~
Parity:	None	~
Stop bits:	1	¥
Flow control:	None	~
	Rest	ore Defaults
0	K Cancel	

5. Complete Hyper Terminal operation, It runs as following

🌯 ff - HyperTerminal								
File Edit View Call Transfer Help								
Connected 0:00:06 Auto detect	Auto detect	SCROLL	CAPS	NUM	Capture	Print echo		

6. Type "AT" in the blank of Hyper Terminal and press "Enter", the modem will return "ok".

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