

F1103 GPRS MODEM

USER MANUAL







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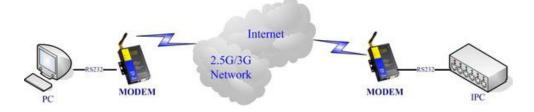
Chapter 1 Brief Introduction of Product

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)

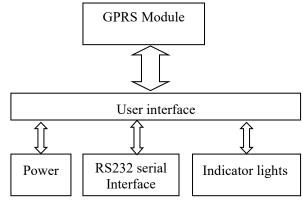
Standard and Convenience

- 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

1.3 Working Principle



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The principle chart of the MODEM is as following:



	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

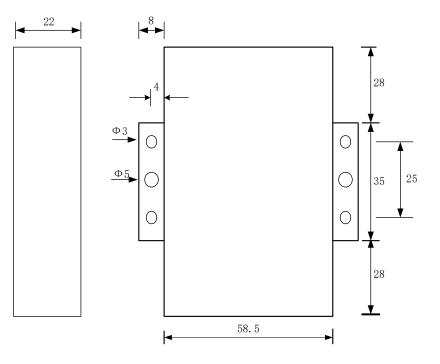
The MODEM must be installed correctly to make it work properly. Warning: Forbid to install the MODEM when powered!

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!

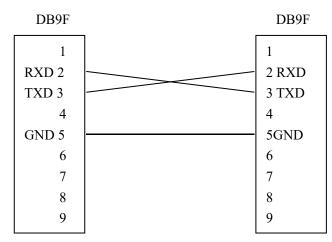
Installation of antenna:

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:

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:



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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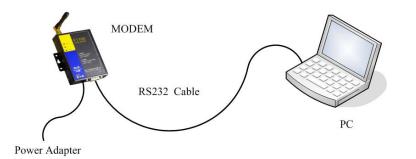
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Chapter 3 Dial-Up Settings

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"





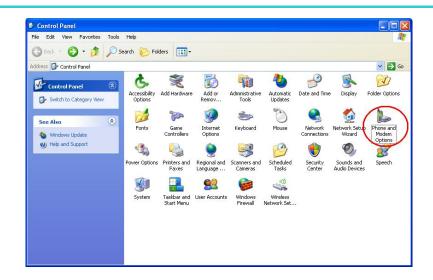
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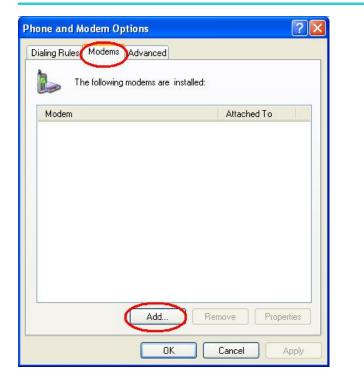
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Choose "Modems", Press "Add" button 2.





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



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





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Install New Modem		E Com
Select the manufacture have an installation dis	er and model of your modem. If your modem is not lis k, click Have Disk.	sted, or if you
Manufacturer	Models	^
(Standard Modern Types)	Standard 19200 bps Modem	
Sector State	Standard 28800 bps Modem	
	Standard 33600 bps Modem	
This driver is digitally signed Tell me why driver signing is		Have Disk
Tourne way dave signing i	- mportany	

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

Select the pold	(s) you want to install the modem on.
	You have selected the following modem:
870	Standard 33600 bps Modem
	On which ports do you want to install it?
AL DOOD	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.
	K Back Finish Cancel

one and Modem Options	?
ialing Rules Modems Advanced	
The following modems are	installed:
Modem	Attached To
Standard 33600 bps Modem	COM1
Add	Remove Properties

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





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Phone and Modem (Options		? 🗙
Dialing Rules Modem	© Advanced		
The following	ng modems are install	ed:	
Modem	_	Atteched To	
Standard 33600	bps Modem	COM1	
			_
	Add	Remove	perties
	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	1		
Maxi	mum Port Speed			
HUM			×.	
	115200			
Dial	Control			
	Wait for dial tone	e 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.

	Advanced		
- Call pi	references		
	Disconnect a c	all if idle for more than	mins
	Cancel the cal	l if not connected within	secs
[Data Protocol:	~	
	Compression:	~	
	Flow contre	None	>

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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itandard 33600 bps Modem Properties	Phone and Modem Options	?
General Modem Diagnostics Advanced Driver	Dialing Rules Modems Advanced	
Extra Settings Extra initialization commands:	The following modems are installed:	
AT+CGDCONT=1,/1P","CMNET"	Modem Attache	ed To
	Standard 33600 bps Modem COM1	
Change Default Preferences OK Cancel	Add	Properties
	OK Cancel	Apply

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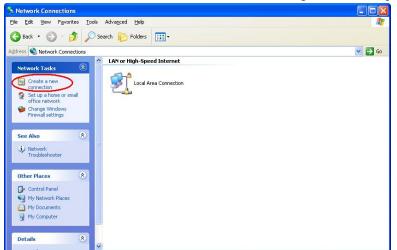
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13. Click "Create a new connection" to start creating a new Dial-Up connection.





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

14. Click "Next" button





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twork Connection Type	59
What do you want to do?	Ś
Connect to the Internet	
Connect to the Internet so you ca	an browse the Web and read email.
O Connect to the network at m	ny workplace
Connect to a business network (u a field office, or another location.	using dial-up or VPN) so you can work from home,
O Set up a home or small offic	e network
Connect to an existing home or s	mall office network or set up a new one.
O Set up an advanced connec	stion
Connect directly to another comp set up this computer so that other	uter using your serial, parallel, or infrared port, or r computers can connect to it.
	< Back Next > Cancel

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

lew Connection W	izard
Getting Ready The wizard is pro	eparing to set up your Internet connection.
	nt to connect to the Internet? from a list of Internet service providers (ISPs)
For a dia	my connection manually i-up connection, you will need your account name, password, and a umber for your ISP. For a broadband account, you won't need a phone
◯ 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 will	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 - Standard	d 33600 bps Modem #2 (COM3)
😋 🖾 🧐 Modem - Standard	1 33600 bps Modem (COM1)
and the second se	

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





Connection Name What is the name of the	e service that provid	es your Internet c	onnection?	S
Type the name of your I	SP in the following bo	DX.		
ISP Name				
GPRS_DIAL				
The name you type her	will be the name of t	he connection yo	u 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

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GPRS_DIAL P	roperties	2 🛛
ieneral Options	Security Networkin	g Advanced
Connect using:		
and the second division of the second divisio	Standard 33600 bps N	lodem (COM1) 🚬 😚
🗆 🎒 Modem -	Standard 33600 bps N	lodem #2 (COM3)
<		*
	II the same numbers	Configure
All devices Ca	m are same numbers	Configure
Phone number		
Area code:	Phone number:	
~	*99***1#	Alternates
Country/regio	n code:	
		~
Use dialing	g rules	Dialing Rules
		Lo raining Protoco
Chausiaan in	natification area when	assusated
snow icon in	notification area when	connected
	-	
		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	
Hardware features	
Enable hardware flow control	
Enable modem error control	
Show terminal window	
Enable modem speaker	_
	OK Cancel

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





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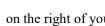


Contraction of the second	ng: Iem - Standard 33600 bp Iem - Standard 33600 bp:	
(
Area coc Country/	e: Phone number: *99***1# egion code:	Alternates
		~
		Dialing Rules
Use o	lialing rules	

28. Click "Dial" button to start dial

User name: Password: Save this user name and password for the following users:	Password:	<		
Save this user name and password for the following users:				
	Save this user name an (ii) Me only	d password f	or the followin	g users:

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







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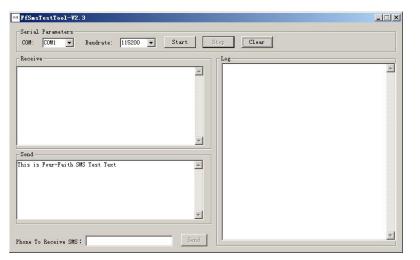
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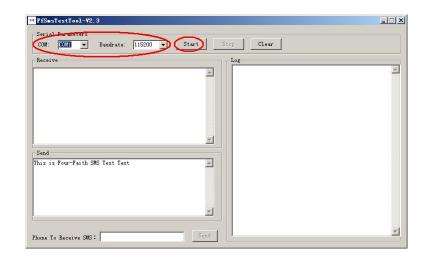
Chapter 4 SMS Test

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.

COM: COM1 💌 Baudrate: 1152	00 💌 Start Stop Clear	
Receive	Start Success	
	×	
Send This is Four-Faith SMS Test Text		
	~	





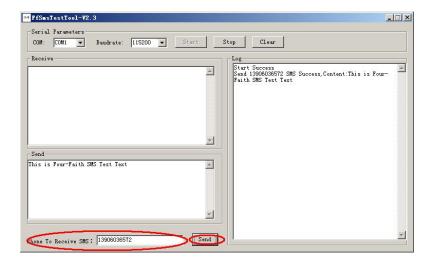
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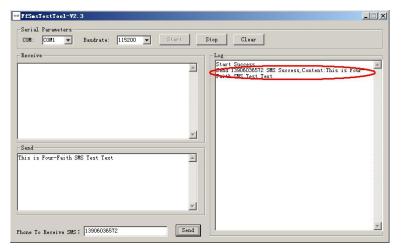
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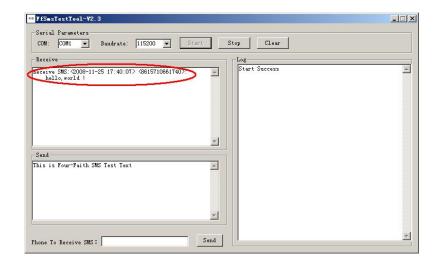
5. Input the phone to receive this test SMS, click "Send" button



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.

 Press "Start" → "Programs" → "Accessories" → "Communications" → "Hyper Terminal"



2. Input connection name, choose "OK"

- 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

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



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COM1 Properties		? 🛛
Port Settings		
Bits per second:	115200	~
Data bits:	8	*
Parity:	None	~
Stop bits:	1	~
Flow control:	None	
	Res	tore 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 C	APS 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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