

MOD 9001 BENQ GSM/GPRS Modem User Manual

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Read First

Before operating the system, please read this manual thoroughly, and retain it for future reference.

Attention

Please not leave the GSM/GPRS Modem and its power adapter in raining or humidity place. The GSM Modem can only be used after being connected to antenna and has a valid SIM card inserted.

Please do not remove the shielding cover.

Warning

The Sky's microwave Corp. will not fix the GSM/GPRS Modem that is opened by user. In such case, its warranty will be terminated too.

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1. Summary

More and more applications emerged with the rapid development of wireless data services, such as vehicle navigation, remote monitoring, wireless Internet access, wireless POS, etc. Thus, more and more devices need to be able to do wireless communication.

With this background, Sky microwave Corp. develops its MOD 9001 BENQ GSM/GPRS Modem. Users of this product can add wireless communication capability easily to their own products, and then, develop many applications.

The MOD 9001 BENQ GSM/GPRS Modem mostly fits the need of data transfer, with SMS data communication, GPRS data navigation, Circuit Switch / Data Connectivity, TCP/IP protocol etc. Because the easy setting up in SCM (Single Chip Mickey), it is convenient for network data communication. The MOD 9001 BENQ GSM/GPRS Modem with small size, which fits both embedded application and external peripheral equipment. The AT command set and RS232 interface will offer easy data connection without any extra circuit control.

Traditionally, the above applications use digital cellular, CDPD or other wire-line modem to do communication, and these technologies are of the disadvantages of high communication expense, limited communication range, dial before communications, etc. When we begin to use MOD 9001 BENQ GSM/GPRS Modem, all these problems disappeared.

Please read this manual carefully before your installation, and please keep this manual for further reference.

2. Interfaces

- u 1 Serial port, (3.3V TTL Voltage level /RS232 Voltage level optional, 115200bps、8、1、N, No hardware flow control) .
- u Power supply (DC 7.5V、500mA) .
- u Antenna interface.
- u Status lights (Red light indicate power status, Green light indicate network status) .
- u SIM card holder.

3. Features

- u Supporting both Chinese/English SMS data communication.
- u Supporting 900/1800/1900 MHz GSM Tri band, better signal quality
- u Status lights indication
- u Supporting AT Command Set
- u Standard RS-232 serial port, easy to use
- u Industrial standard design and quality guarantee

4. Specifications

- u Operation temperature : -25 - +60°C
- u Storage temperature: -35 - +80°C
- u Humidity : 0 - 95% non-condense
- u Receive Sensitivity: -102dBm
- u Maximum Transmit Power: 1W
- u Dynamic range: 62dB
- u Frequency tolerance : $\leq \pm 0.1$ ppm
- u Power supply: 5V、7.5V、12V optional, and can be changed according to customer's requirement.。
- u Current: standby 50mA, work 300mA。
- u Weight: 250g

5. Installation

- a) Open the package box and take the GSM MODEM out, check all components within the package box according to the packing list
- b) Remove the GSM modem's back-cover with a screwdriver, open the SIM card holder, insert in a valid SIM Card provided by GSM network operator or service provider. Choice the serial port output voltage by properly set the jumps. Then, fix the back-over back.
- c) Fix the GSM-MODEM to a proper location and connect the antenna to its interface.
- d) Fix the data line to the GSM MODEM side first, and then, connect the other side to user's equipment's data port.
- e) Connect the GSM-MODEM power supply interface with the power adapter's output jack, and then connect the adapter to its power supply source.

Make sure that all connections are correct and proper, then, turn on power.

Overview



Side view (end side)

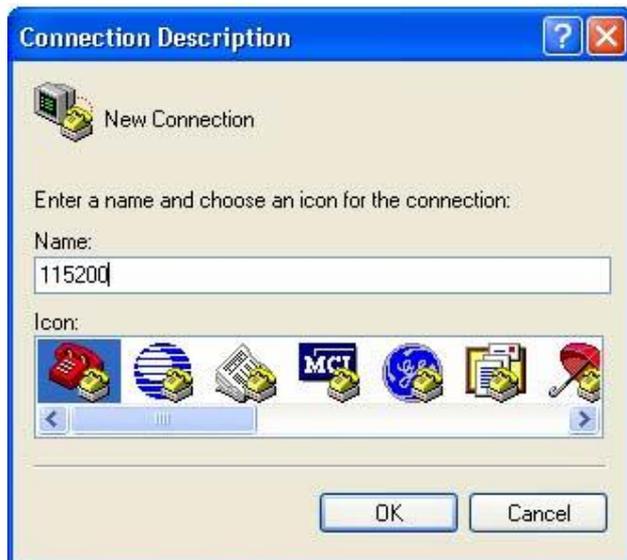


Side view (front side)



6. Module EVB DOME Basic Operation

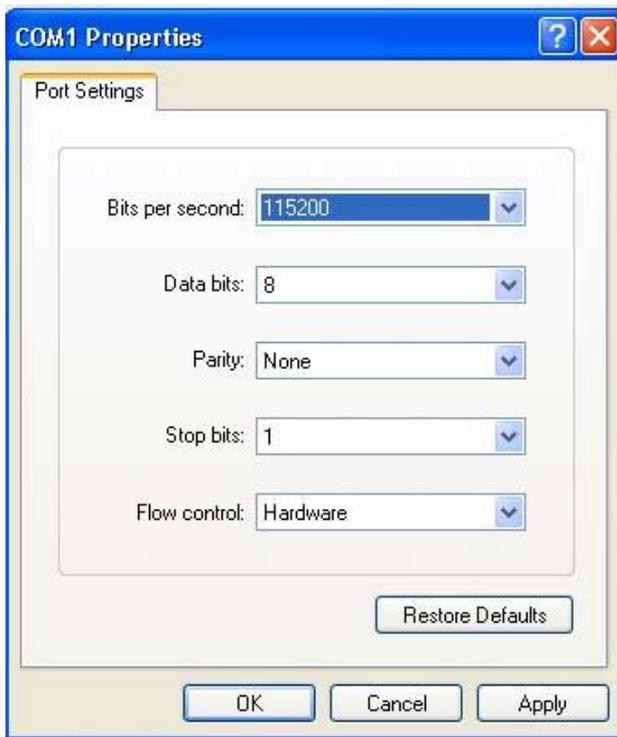
- A. Module connection with **Hyper Terminal**.
 1. Establish or Open **Hyper Terminal** from **All Programs** à **Accessories-** à **Communications** and setting up relevant parameters. Module baud rate is 115200.
 - (1). Establish connection.



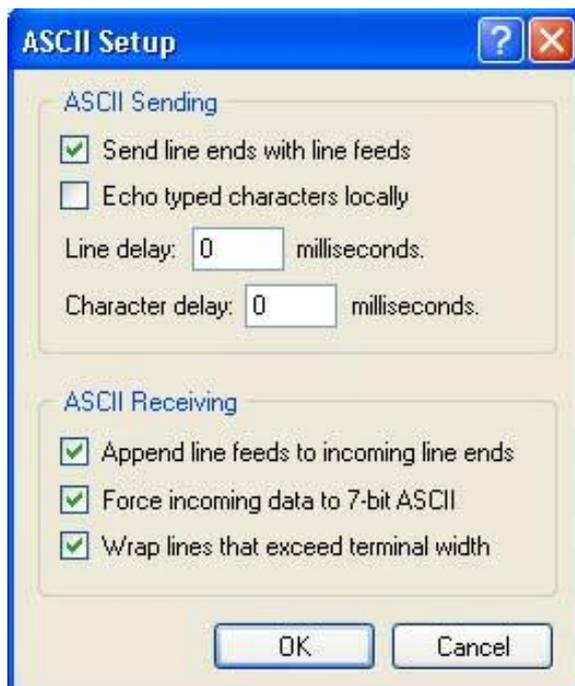
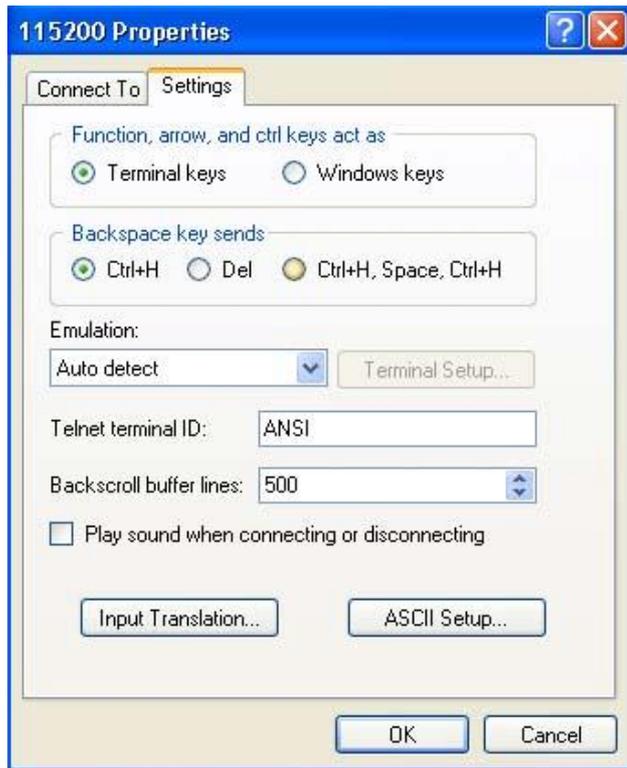
(2). Setting up usage port.



(3). Setting up port parameters.

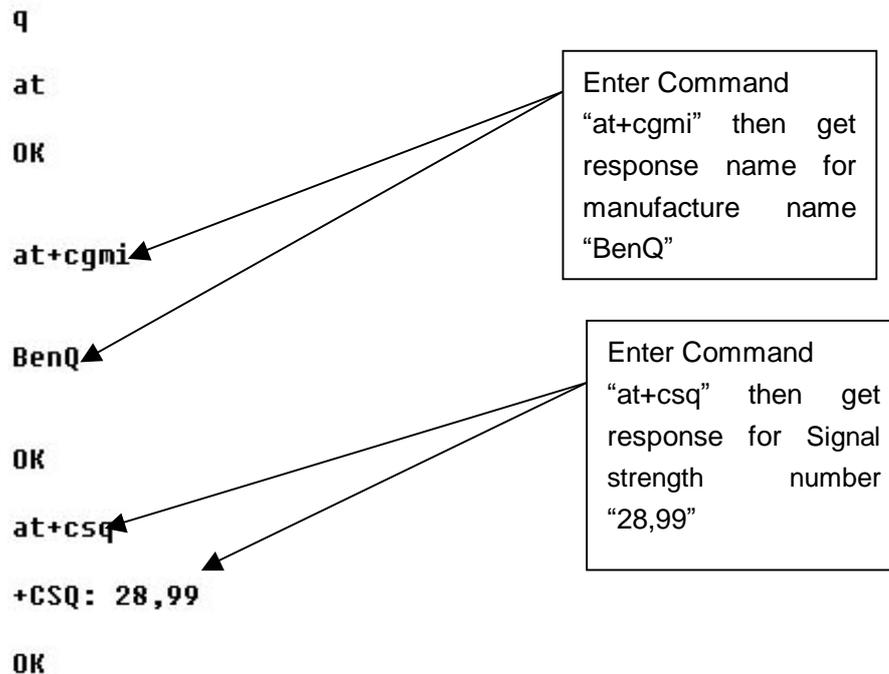


(4). Setting up **property** in **File** Menu of **Hyper Terminal**



2. Insert in a valid SIM Card provided by GSM network operator or service provider. Then connect BENQ Modem with computer by RS232 port and power supply. When the Red light is flash, Module is work property. You can input word "AT" then press "Enter" key, it should be response word "OK" means work property. **All the module commands are executed by pressing "Enter" key.**

Example is showing below:



3. If SIM card requires switch on password, please enter: **AT+CPIN= "password"**
 4. Read module information
 - AT+CGMI** (Manufacture name)
 - AT+CGMM** (Read Module model)
 - AT+CGMR** (Read module current SW version information)
 - AT+CGSN** (Module serial number)
 - AT+CSG** (Signal strength number)
- B. Dial call or receive call (**Module doesn't provide voice port even with relevant command**)
1. Dial call **ATDxxxxxxxx;** (xxxxxxxx is phone number, example: ATD1860;)
 2. Call waiting function: **AT+CCWA**
 3. Hold function: **AT+CHLD=?**
 4. Dial latest call number: **AT+CLCC=?**

5. Enter information once connection established (DTMF): **AT+VTS= (0-9, #, *, A-Z)**
 Dial Extension number (example: 1234): **AT+VTS=1**
AT+VTS=2
AT+VST=3
AT+VST=4
6. Receive call: **ATA**
7. Hang off call: **ATH**
8. Incoming call ID: **AT+CLIP=1**
9. SMS function:
 - (1) Setting up SMS Center number: **AT+CSCA= "+8613800XXXXXX", 145**
 SMS Center number: +8613800XXXXXX
 - (2) TEXT parameter: **AT+CSMP=17, 168, 0, 0** English format
AT+CSMP=17, 168, 0, 0 Chinese format
 - (3) Send SMS: **AT+CMGS**
 - (4) Read single SMS: **AT+CMGR=1**
 - (5) List multiple SMS: **AT+CMGF=1**
AT+CMGF=4
 - (6) Delete SMS: **AT+CMGD**

Example 1: Send English character SMS

```
AT+CMGF=1
AT+CSMP=17, 168, 0, 0
AT+CMGS= "Telephone number"
>Character information Ctrl+z
```

Example 2: Send Chinese character SMS

```
AT+CMGF=1
AT+CSMP=17, 168, 0, 8
AT+CMGS= "Telephone number"
>Chinese character information Ctrl+z
```

9. Chinese character information is **Unicode**.

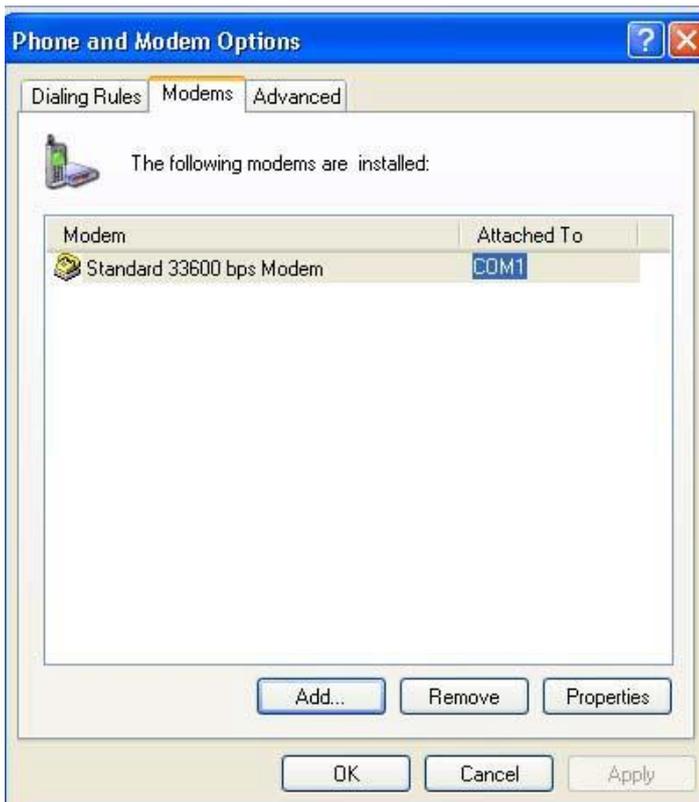
GPRS Module Internet Access

Once connect module with PC

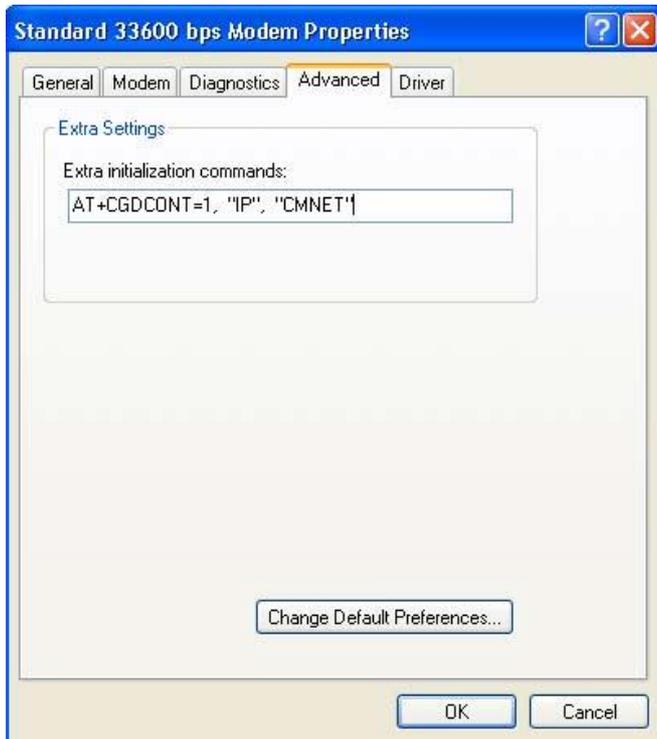
1. Double click **Phone and Modems Options** in **Control Panel**
2. Select **Modems** in **Phone and Modems Options** and click **Add** button
3. A. Select **Standard Modems Types**
 B. Select **Standard 33600 bps Modem**
 C. Select relevant port



4. Click **Properties** and select **Advanced** option.



5. Enter AT command `AT+CGDCONT=1,"IP","CMNET"` into textbox.



6. Establish **Dial Connection**. Dial number is *99#. User name and Password are empty.



7. Click the icon from **Network Connection** to initial connection.



8. After initial period, the connection is on.

