P300U Wireless Modem
User Guide
1. Safety information

Radio device have limitations in the vicinity of electronic devices:

1. Switch the Modem off when you are in a hospital or near medical devices like pacemakers. The Modem may interfere with the operation of these devices.

1. Switch the Modem off when flying. Secure it so that it cannot be switched on inadvertently.

1. Switch the Modem off when you are near petrol station, fuel depots, chemical plants or blasting operations. The Modem can disturb the operation of technical equipment.

1. Interference can occur if the device is used near televisions, radios.

1. In order to avoid possible damage, we recommend that you only use the specified accessories. These have been tested and shown to work well with the Modem.

Note: The warranty does not apply in the event of improper use.
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3. Overview

3.1 Top View

![Top view of the modem](image1)

Figure 1: Top view of the modem

3.2 Bottom View

![Bottom view of the modem](image2)

Figure 2: Bottom view of the modem
4. Product description

- The P300U is the wireless modem with USB interface that bases upon the SIM600 module. Designed for global market, P300U is a Quad-band GSM/GPRS modem with integrated EDGE technology that works on GSM850, EGSM900, DCS1800 and PCS1900.

- P300U provides GPRS/EDGE multi-slot class12 capability and supports the GPRS coding schemes CS1~4 and EDGE coding schemes MCS1~9. P300U is the ideal solution for voice, data and SMS communication.

- P300U makes integration as simple as possible, primarily for users in the M2M market segment: a stand-alone device, the modem is fitted with standard USB interfaces for a power supply, an antenna, a PC, and a headset, with its plug & play technology making it very easy to put into operation.

- Thanks to its robust case, the P300U Wireless Modem is ideal for use in many different business segments, such as in measurement and remote maintenance, traffic systems, transportation and logistics, vending machines, security, and building technology.
4.1 Highlights

- Quad-band GSM850/EGSM900/DCS1800/PCS1900
- Support GSM/GPRS/EDGE
- Coding schemes: CS1~4; MCS1~9
- Data, voice and SMS
- Easy to integrate
- LED display
- Wide input voltage range
- Highly compact, light and powerful
- USB interface: USB specification 2.0 compliant full-speed
- Integrated SIM card holder
- Extended AT commands for industrial applications
- USB 2.0 interface, simple integration via plug & play
- USB bus-powered, requires no external power supply
- Firmware upgrade available.
- RF test interface.
5. Features

5.1 Product data

- Quad-band GSM850/E GSM900/DCS1800/PCS1900
- Certified in accordance with GSM phase 2/2+
- Output performance:
  - GSM/GPRS:
    - Class 4 (2W) for GSM900
    - Class 1 (1W) for DCS1800/PCS1900
  - EDGE:
    - Class E2 (0.5W) for GSM900
    - Class E2 (0.4W) for DCS1800/PCS1900
- Control via AT commands through USB interface
- Dimensions: 109×46×14mm
- Weight: approx. 41g
- SIM card: 3V & 1.8V
- Data interface: USB 2.0
- GPRS/EDGE multi-slot class 12
- GPRS mobile station class B
5.2 Audio

- Half rate (HR)
- Full rate (FR)
- Enhanced full rate (EFR)
- Echo cancellation
- Noise reduction

5.3 SMS

- Point-to-point MT and MO
- SMS cell broadcast
- Text and PDU mode

5.4 Data

- CSD up to 14.4kbps
- USSD
- Non-transparent mode
  - EDGE: max. 236.8 kbps
  - GPRS: max. 85.6kbps
- Coding scheme CS1~4, MCS1~9

5.5 External interfaces

- USB 2.0 interface
- Handset audio interface
- Mini-SIM card holder
- RF test interface
- Reset key (Only for firmware upgrade)
6. Installation

6.1 Package contents

- P300U Wireless Modem
- CD (P300U User Guide and driver)
- USB extender cord
- Headset (Optional)

![Image of package contents](image)

Figure 3: Package contents

6.2 Installation information

- Install the modem driver software following the procedure defined in our software installation user guide.
- Insert the SIM card into the SIM card holder with the correct direction (the SIM card’s chamfered corner must match with the latch on the housing).
Connect the modem and USB port with the USB extender cord (see note). Then the modem is powered on from the USB ports.

**NOTE:** The extender cord is a three ports unit, port 1 and port 2 are together for the PC side, port 1 is used to get power from the PC and simultaneously transmit data between the PC and the modem (see figure 4 & figure 5), port 2 is only used to get power from the PC to enhance the power supply of the modem, it can’t be used to transmit data (see figure 4 & figure 7); Port 3 is only for the modem (see figure 4 & figure 5):

![USB extender cord with three ports](image)

**Figure 4: USB extender cord with three ports**

The recommended connection between the modem and the PC is shown in figure 5:

![Correct connection between the modem and PC](image)

**Figure 5: The correct connection between the modem and PC**
We do not recommend inserting only port 1 to the PC side to start up the modem (see figure 6), in this way, the modem can not work steadily in the case of heavy load during data transmitting, since only one USB port can not afford so much current, please refer to chapter 7.

Figure 6: Using only port1

And the incorrect connection is shown in figure 7:

Figure 7: The incorrect connection between the modem and PC
7. Peripheral and interface description

The following interfaces are available on the Modem:
- Status indicator lights
- USB interface
- Headset connector
- SIM card holder
- Antenna
- RF test interface
- Reset key

7.1 Status indicators

The modem has three led lights to indicate the modem status:
- Light1: Power indicator (Keep on once the modem is plugged into the USB port)
- Light2: Network status
- Light3: Error (No SIM card or invalid SIM card)

Figure 8: Status indicators
### 7.2 USB interface

- The Modem’s power supply adopts USB bus powered mode, needs no additional external power supply, it gets power from the USB ports of notebook or PC.
- Data and command are transmitted by USB data line D+ & D

![Figure 9: USB interface](image)
7.3 Headset connector

The handset is connected via a 3-pin Mini socket. The audio interface can be configured by AT commands.

Figure 10: Headset interface
7.4 SIM card holder

The connector is intended for 3V & 1.8V SIM cards in accordance with GSM11.12 phase 2 to operate the Modem.

The SIM card must be inserted into the card holder to put the Modem into the normal operation.

Figure 11: SIM card holder and guidance

1) Make sure that there is no voltage applied to the Modem before the SIM card is correctly inserted to the SIM card holder.

2) Insert the SIM card holder and push it back into the housing.

Note: The SIM card must be replaced while there is no voltage applied on the Modem.
SIM card pin assignments:

<table>
<thead>
<tr>
<th>Signal</th>
<th>Pin No.</th>
<th>Input/Output</th>
<th>Description</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>GND 1</td>
<td>×</td>
<td>Gnd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VPP</td>
<td>2</td>
<td>×</td>
<td>N.C</td>
<td></td>
</tr>
<tr>
<td>I/O 3</td>
<td>×</td>
<td>Input/Output</td>
<td>Input/Output</td>
<td>Input: Ri≥1MΩ, Output: Ro=220Ω</td>
</tr>
<tr>
<td>CLK</td>
<td>4</td>
<td>Output</td>
<td>Clk</td>
<td>Ro=220Ω</td>
</tr>
<tr>
<td>RST 5</td>
<td>×</td>
<td>Output Reset</td>
<td>signal R0=220</td>
<td></td>
</tr>
<tr>
<td>VCC</td>
<td>6</td>
<td>×</td>
<td>Power</td>
<td>3V : (VCC=3V±10%)</td>
</tr>
</tbody>
</table>

7.5 Antenna

A Quad-band antenna (GSM850/EGSM900/DCS1800/PCS1900) has been equipped.

![Antenna](image)

Figure 12: Tri-band Antenna

7.6 RF test interface

An antenna test interface is reserved for RF function test.
7.7 Reset key

A reset key is designed for upgrade the firmware.
8. Current Consumption

The current consumption is listed in the following table:

<table>
<thead>
<tr>
<th>State</th>
<th>Conditions</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idle Network attached, idle</td>
<td>28 36 45 mA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voice Call</td>
<td>GSM850/GSM900, PCL=5</td>
<td>320</td>
<td>340</td>
<td>360</td>
<td>mA</td>
</tr>
<tr>
<td></td>
<td>GSM1800/1900, PCL=0</td>
<td>285</td>
<td>305</td>
<td>325</td>
<td>mA</td>
</tr>
<tr>
<td>Data transmission</td>
<td>GSM900, PCL=5</td>
<td>285</td>
<td>308</td>
<td>330</td>
<td>mA</td>
</tr>
<tr>
<td></td>
<td>GSM1800/1900, PCL=0</td>
<td>250</td>
<td>270</td>
<td>290</td>
<td>mA</td>
</tr>
<tr>
<td></td>
<td>GSM900, PCL=5</td>
<td>518</td>
<td>538</td>
<td>558</td>
<td>mA</td>
</tr>
<tr>
<td></td>
<td>GSM1800/1900, PCL=0</td>
<td>470</td>
<td>490</td>
<td>510</td>
<td>mA</td>
</tr>
</tbody>
</table>
9. Mechanics

9.1 Top View

Figure 15: Modem top view

9.2 Side View

Figure 16: modem side view
9.3 Bottom View

Figure 17: modem bottom view
10. AT command control

The Modem is controlled and programmed by means of AT commands. The AT commands structure corresponds to the SIM module used. To obtain the AT commands or for more help, please contact our FAE.
11. Contact us

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