GPRS Communication Module

With GT300 Electromagnetic Water-meter Transmitter

Operation & maintenance Manual

Content

1. Description

GT300 battery-powered electromagnetic flow meter uses GPRS wireless network to transfer data to computer. Users can get access to Instantaneous Flow, Instantaneous Flow Rate, Cumulative Flow Value, Conductivity Ratio, Signal Strength, Battery Level and other information via computer.
C/S structure is applied to GT300 GPRS data communication software. User can install the software to a computer with Internet access to realize date monitoring.

2. Product Image

Figure 2.1 Split Type

Figure 2.2 Integrated Type

3. Install SIM Card

GPRS device needs to install SIM card and the specific installation method is as follows:

1)   Open GPRS module housing and unlock the card holder.
2)   Unplug the card holder.
3)   Insert SIM card.
4)   Press the card holder.
5)   Push the card holder to lock it.

Detailed figures description, refers to Annex A Steps to Install SIM Card.

4. GPRS Parameters Setting

4.1 Hardware Connection

1)   Split type do the wiring in accordance with the identifications on GPRS module wiring terminals and the identifications on flowmeter (see Figure 4.1) to connect electromagnetic flowmeter to GPRS module. The step is not used to integrated type.
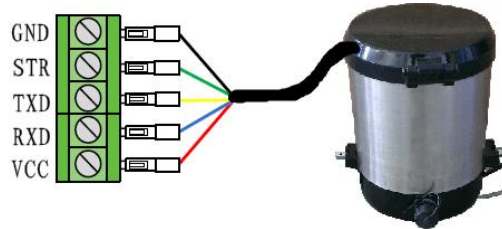
Figure 4.1 Split Type GPRS Module Wiring

2) Use USB to connect GPRS module to computer (see Figure 4.1)
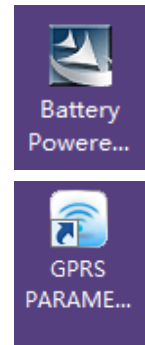

Split Type   Integrated Type

Figure 4.2 Hardware Connection

4.2 Software Installation

a) Install parameter setting software Double click the icon in the CD.

Install the software according to the guidance and when the software is installed, the GPRS PARAMETER SETTING PROGRAM shortcut appears on the desktop.

b) Install Driver

GPRS module use USB interface to set parameters, support USB2.0 transfer protocol. The Driver on the CD shall be installed before the first use of the GPRS module. Find the Win2K_XP.exe in the CD.

Win2K_XP Setup. Exe Macrovision Corp…..	Win98SE Setup. Exe Macrovision Corp…..

Double click the icon and install the software according to the guidance.
Detailed steps refer to Annex B.

c) Install Single Version Communication Software

The software operating environment: Above Windows95 operating system, install the full version of Microsoft office software.
Open CD and find "Battery Powered GPRS Communication Setup Launcher", double click the icon.

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Battery Powered
GPRS Communication
Setup Launcher

Install the software according to the guidance till the installation is finished.
When finish the installation, the icon appears in the desktop.

Data monitoring software can view multiple meter data, query, export, print a single sheet data.
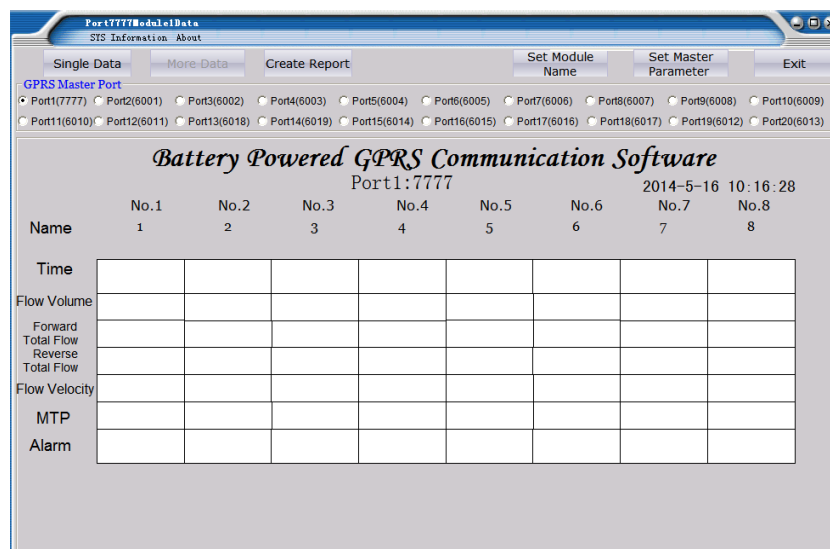Software interface refers to Figure 4.3.

Figure 4.3 Communication Software Interface

4.3 Parameter Setting

1) PC software parameter setting

When connect GPRS with Master, find the "Set Master Parameter" via this path: "Start" – "All programs" – "Battery-powered Flow Data Communication Software". Refer to Figure 4.4.
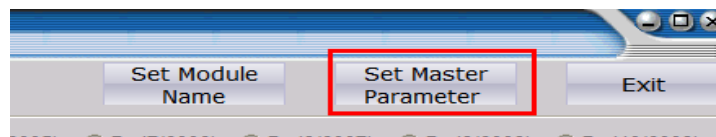

Figure 4.4 PC Parameters Setting

Before setting master parameters, turn ON the two power-supplies.
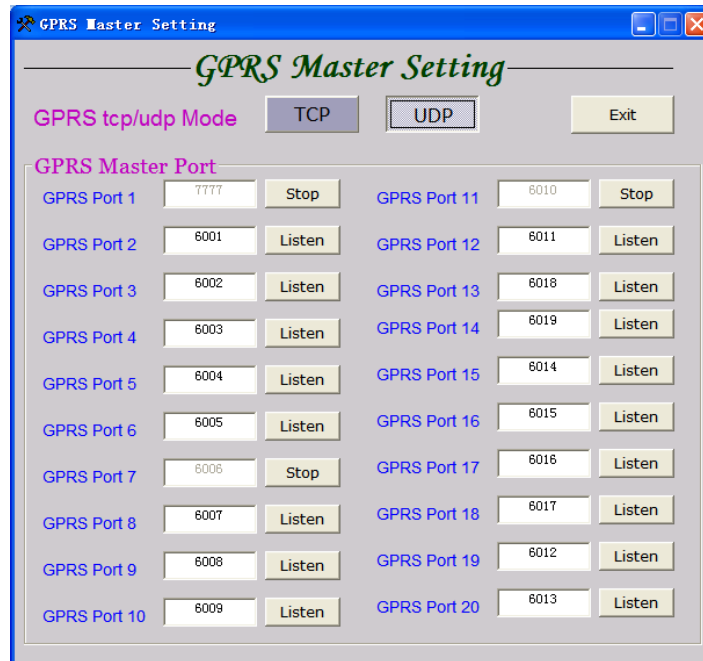Click "GPRS Master Setting", and type in password **"9454"** to set GPRS mater parameters.

Figure 4.5 PC Setting

TCP/UDP selection: it is suggested to use UDP when Connection Mode is applied.
GPRS Master Port: This section is used to set the port number, the port must be within the range of the computer is listening, and the port number is consistent with the lower machine settings.

2) Lower machine parameters setting

Double click the shortcut on the desktop to open the software.
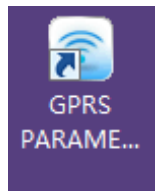
A welcome interface will appears. The interface will search the GPRS device automatically (as Figure 4.6 shows). When the device is found, another interface (as Figure 4.7 shows) will appear, and other wise, the software will close automatically.
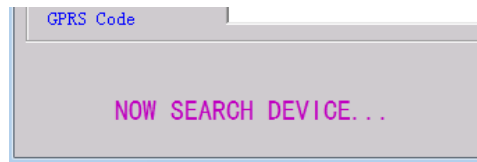

Figure 4.6 Search Device Interface

In the interface below, user can set **BT803** GPRS module parameters and debug the data. When finish selecting or typing in the parameter data, press "Setting" icon of each parameter.

Figure 4.7 Setting Interface

Parameter introduction

Item	Suggested Parameter	Introduction
GPRS mode:	GPRS	Select GPRS mode or Shot Message mode.
GPRS address:	1	B/S structure has no meaning.
GPRS tag:		Select display tag.
GPRS type:	SIM900A	Select application mode.
GPRS enable send:	Enable	SIM Card number.
GPRS work mode:	run mode	Whether enable send?
GPRS data mode:	GPRS mode2	Run Mode or Debugging Mode.
GPRS send interval:	7	Select communication mode. B/S mode or C/S mode.
GPRS send time:		Time interval to send the data.
GPRS APN		Send time.
GPRS user		Setting local APN.
GPRS code		If uses needs to log in, needs to type in; otherwise, no need to type in.
GPRS TCP/UDP mode:	UDP	If uses needs to log in, needs to type in; otherwise, no need to type in.
GPRS IP/ DNS mode:	IP	Select UDP or TCP.
GPRS host IP address:		Select IP or Domain Name.
GPRS host DNS		Select IP mode or IP address.
GPRS port:		If select Domain Name mode, type in Domain Name.
SMS Number	0-5	The number of messages sends.
Telephone Number N:		Send the message to the number.
GPRS SMS Center:	+98 123 456 7890	The message center number set (example).

When finish the setting, close the software, disconnect the connection and make the Flow Meter works under Measurement Mode. (Battery symbol shows in the middle of LCD.)

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5. Debugging

5.1 Manual Send

The data can be sent by manual and before sending, GPRS module and network connection shall be tested.

- For the split type, after installing the instrument in the field, turn the power supply to "ON", GPRS module can be triggered to send data by magnetic keys. Use magnetic keys to cross the "Send" position shown in Figure 5.1.

Figure 5.1 "Send" and "Reset" Buttons on Split Type

- For the integrated type, after installing the instrument in the field, turn on the power supply, turn off   "Set" and press "Send" as show in Figure 5.2.

Figure 5.2 "Send" and "Reset" Buttons on Integrated Type

Wait 2 to 3 minutes, GPRS module completes the data transmission, check **whether GPRS data have been sent to the host computer. If the host** computer does not receive the data, check whether the network parameters are set correctly.

5.2 Enable Send

When finished parameter setting, unplugs the USB cable, turns on the two power-supplies, when "GPRS timing date sending time" meets, data will be sent automatically.

6. Data View

When finished the parameters setting of PC and lower machine, the monitored port numbers need to be selected on PC. Refer to Figure 6.1 Red Rectangles.
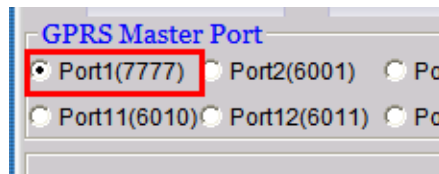

Figure 6.1 Port Numbers Selected

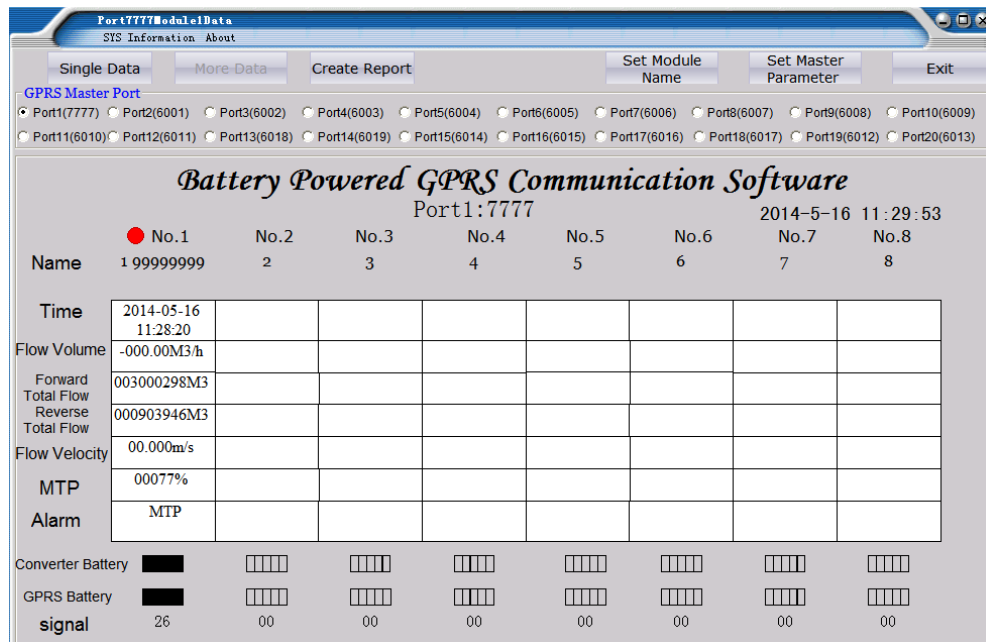After selecting right, wait to receive data.
Successfully received screen shown in Figure 6.2.

Figure 6.2 Successfully Received Screens
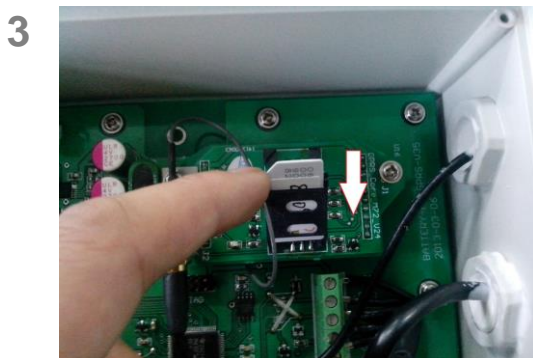
Annex 1   Steps to Install SIM Card
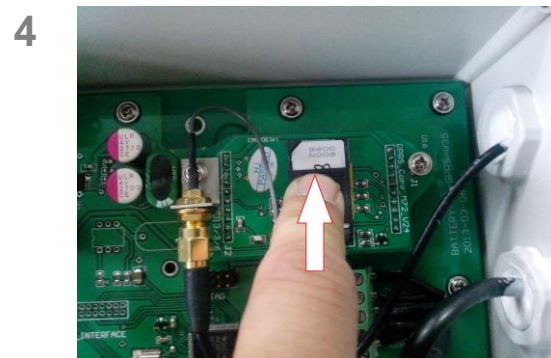
Install the SIM Card according to the steps below:
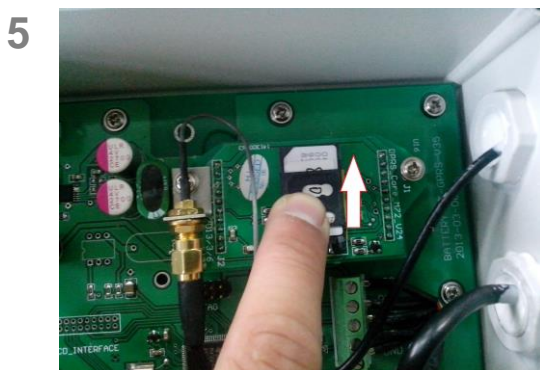
1

Open GPRS module cover and unlock the card holder.

2

Unplug the card holder.

3

Insert SIM card.

4

Press the card holder.

5

Push the card holder to lock it.

Annex 2   Steps to Install USB Driving

CP210x Driver shall be correctly installed to connect computer to GPRS module, and user can install the software according to the computer operation system.

Take Windows XP as an example:

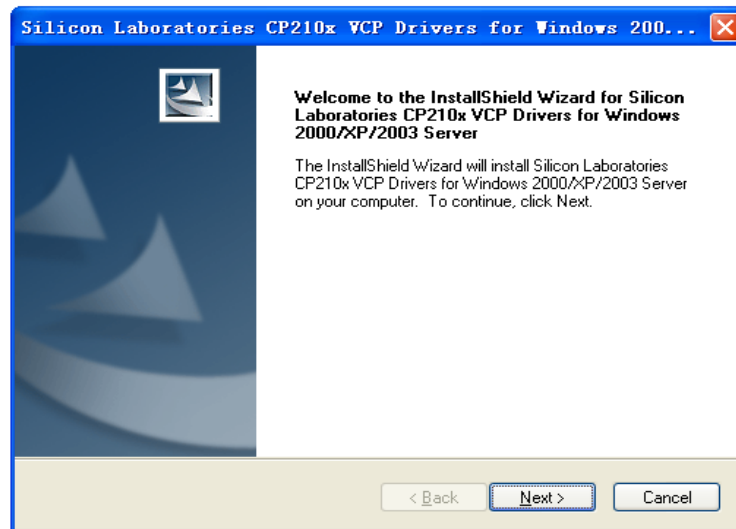## a)Find Win2K_XP.exe in the CD and double click to install.

Win2K_XP Setup. Exe Macrovision Corp…..	Win98SE Setup. Exe Macrovision Corp…..	Microsoft Word

Figure B.1 Driver Software Installation

b) When the driver installation finished, connect GPRS mode to computer.

For the first time, when connect the GPRS mode to the computer via USB connector, an interface will appear to remind a new hardware is found and need to install the divers. Assign the diver path to the installation path, software "CP210X USB Composite Device" and "CP210X USB to UART Bridge Controller" will be installed automatically. Next time when connect the GPRS mode to computer, the installation is not required. The interface refers to Figure B.2.
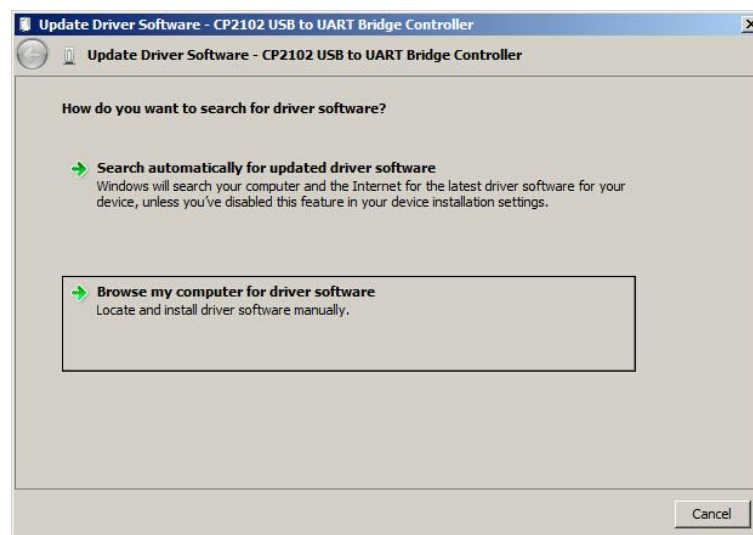

Figure B.2 Driver Installation Remind Interface

c) Windows XP system driver default installation path is
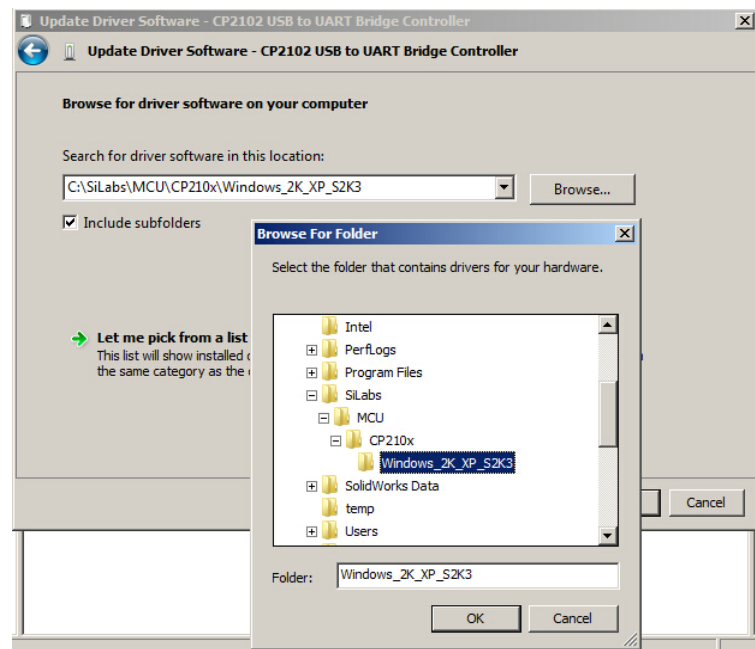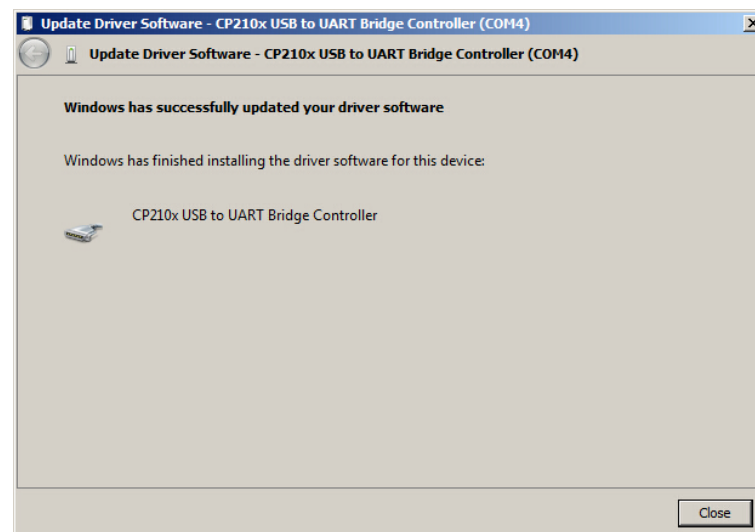C:\SiLbs\MCU\CP210x\Win2K_XP".

Figure B.3 Select Installation Path

Figure B.4 Installation Finish

d) When finish the Diver installation, an icon will appear in the right corner bottom of the screen and USB Driver installation is successful.

Annex 3   Note When Install GPRS Module Housing

When successfully finish GPRS module debugging, the module housing shall be installed properly to make sure IP68 protection class is meet. The steps are:

1) The screws must be tightened in the sequence 1, 2, 3, 4, 5, 6, 7 and 8 when the housing is installed as shows in Figure C.1.
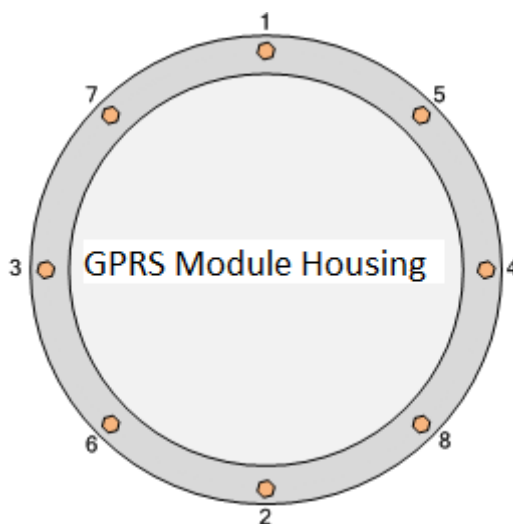
2) The torque is 6.5N.m.

Figure C.1 Plan View of GPRS Module Housing