SM700-A(B) Smart Operating Instructions for Multiplexer

Jiaxing Songmao Electronics Co., Ltd.

http://www.smmeter.com

E-mail:sales@smdznet.com

Table of contents

Jiaxing Songmao Electronics Co., Ltd. Address : Room 1-201, Science and Technology Entrepreneurship Service Center, No. 79 Jinsui Road, Nanhu District, Jiaxing City, Zhejiang Province China
http://www.smmeter.com Tel:86-573-82623038 Email:sales@smdznet.com

Disclaimer:

Before using the product, please read the manual intensively.First, please confirm which type of Instruments is used with the HART protocol, and then find out the appropriate using method in the manual. Before switching on the power, please confirm all interfaces are correctly connected. The company will not be held liable for any damage caused by improper use that violates the methods specified herein unless following the instructions.

This document serves as the official product description. However, content may become outdated or invalid due to product/software upgrades. We do not guarantee consequences arising from such changes. Please monitor version updates and ensure prompt updates.

For the latest information, please refer to our website: www.smmeter.com.If you have any questions about this document or the performance description of this product, please contact your supplier or contact us directly.E-mail :sales@smdznet.com or contact tel:86-573-82623038 for advice and answers.

Jiaxing Songmao Electronics Co., Ltd. Address : Room 1-201, Science and Technology Entrepreneurship Service Center, No. 79 Jinsui Road, Nanhu District, Jiaxing City, Zhejiang Province China
http://www.smmeter.com Tel:86-573-82623038 Email:sales@smdznet.com

1. Introduction of SM700-A(B) Converter

1.1 Product Introduction

SM700-A(B) Intelligent Multiplexer is A product developed by using ARM microprocessor, special chip and combining with A lot of practical experience. It is designed according to the requirements of industrial products and has the characteristics of high reliability and stability. The smart converter is equipped with a 3-way standard RS485 interface.

Because the SM700-A(B) intelligent multiplexer is designed for industrial integration, it adopts special design in terms of temperature range, vibration, electromagnetic compatibility and interface diversity to ensure stable operation in harsh environments and provide high quality assurance for your equipment.

1.2 Product Performance

- One RS485 or RS232 interface can be converted into three RS485 interfaces.
- Support standard and non-standard MODBUS _ RTU protocol transmission.
- Equipped with standard RS485 or RS232 interface, it can communicate with computer or server.
- Support multiple collectors or PCs.
- Baud rate, check bit, stop bit and other communication parameters can be set according to the actual access of RS485 or RS232 instrument.
- With power-off memory function, parameters do not need to be reset after power off.

1.3 Main Parameters

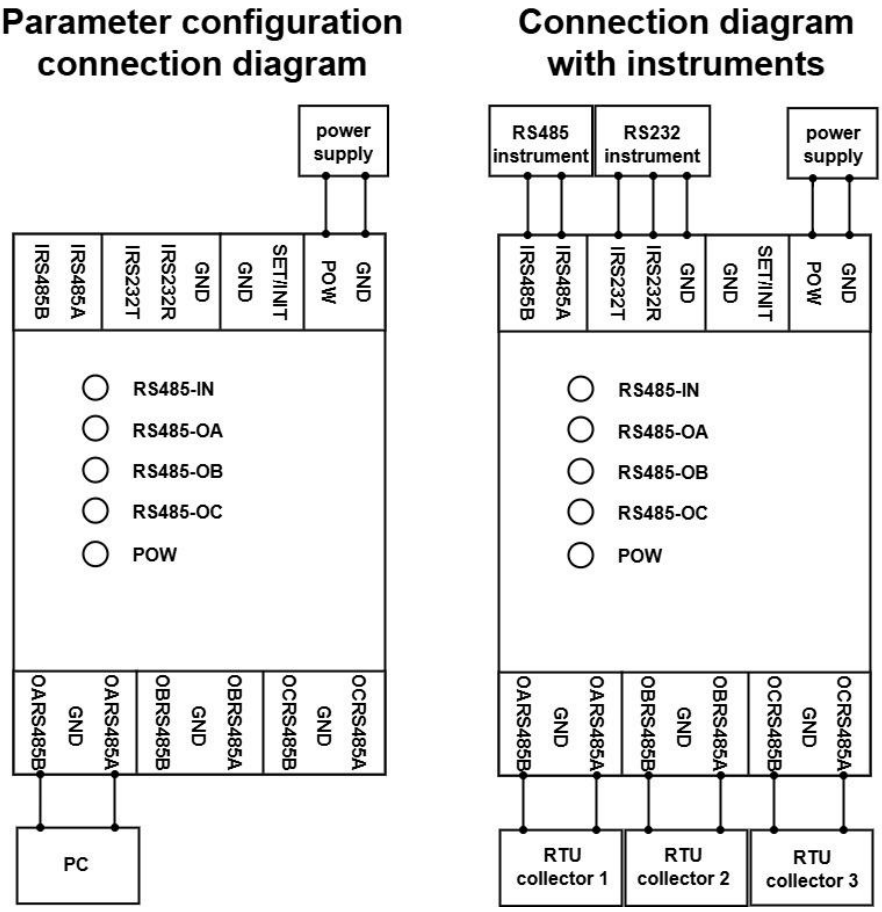
- Shell size: length 103 mm × width 71 mm × height 43 mm.
- Working temperature: -20 ℃ ~ + 80 ℃.
- Relative humidity: 10% ~ 80%.
- Power supply input voltage: DC 12 ~ 24V, the ripple of the power supply shall not be greater than 200 mA, and the power supply shall provide 100mA.

Jiaxing Songmao Electronics Co., Ltd. Address : Room 1-201, Science and Technology Entrepreneurship Service Center, No. 79 Jinsui Road, Nanhu District, Jiaxing City, Zhejiang Province China
http://www.smmeter.com Tel:86-573-82623038 Email:sales@smdznet.com

2. Physical Drawing and Indicator Light Function of SM700-A(B) Converter

2.1 Physical Drawings

2.2 Wiring Diagram



2.2.1 Setting Mode

Jiaxing Songmao Electronics Co., Ltd. Address : Room 1-201, Science and Technology Entrepreneurship Service Center, No. 79 Jinsui Road, Nanhu District, Jiaxing City, Zhejiang Province China
http://www.smmeter.com Tel:86-573-82623038 Email:sales@smdznet.com

Connect the positive and negative poles of the 24 V DC power supply to the POW and GND ports respectively, and then use the 485 communication line to connect the computer and the SM700-A(B) converter. The D + line of the 485 communication line is connected to the OARS485A port of the converter, and the D- line is connected to the OARS485B port.

Open the configuration software, select the correct port number, baud rate, check bit and stop bit, then open the serial port and set the working mode to "command mode". At this time, you can set the parameters of the converter.

2.2.2 Operation Mode

After the parameters are set successfully, the converter is set to the multi-master-one-slave mode.

Connect the RS485/RS232 instrument to the IRS485/IRS232 port of the converter, connect the monitoring equipment or RTU collector to the ORS485A and ORS485B ports, and finally connect the positive and negative poles of the 24 V DC power supply to the POW and GND ports of the converter respectively. The SM700-A(B) converter enters normal operating mode.

2.3 Port Introduction

Port name	PROM	IRS485B、IRS485A	IRS232T、IRS232R、GND	GND、SET/INIT	POW、GND
Function/access device	Proceed	RS485 communication	RS232 communication		Power source

Port name	OARS485B、GND、OARS485A	OBRS485B、GND、OBRS485A	OCRS485B、GNDOCRS485A
Function/access device	RTU collector 1	RTU collector 2	RTU collector 3

- PROM: Press the program button. Press and hold the button before applying power to the converter. At this time, the converter enters the next program state. The converter can be upgraded through IRS485 port or IRS232 port.
- IRS485A, IRS485B: RS485 communication input interface, according to different requirements, refer to the wiring diagram to connect the instrument equipment to realize the data transmission between the converter and the instrument.
- IRS232T, IRS232R, GND: RS232 communication input interface, according to different requirements, refer to the connection diagram to connect the instrument and equipment to realize the data transmission between the converter and the instrument.
- POW, GDN: DC power supply, the positive and negative poles (+,-) of the power line are connected to the corresponding (POW, GND) terminals respectively.
- ORS485A, ORS485B, GND: RS485 signal output interface, can be connected to three different RTU acquisition systems.

2.4 Description of Indicator Light

- RS485 _ IN indicator: RS485 or RS232 communication indicator.
- RS485 _ OA indicator: OARS485 communication indicator.
- RS485 _ OB indicator: OBRS485 communication indicator.
- RS485 _ OC indicator: OCRS485 communication indicator.

Jiaxing Songmao Electronics Co., Ltd. Address : Room 1-201, Science and Technology Entrepreneurship Service Center, No. 79 Jinsui Road, Nanhu District, Jiaxing City, Zhejiang Province China
http://www.smmeter.com Tel:86-573-82623038 Email:sales@smdznet.com

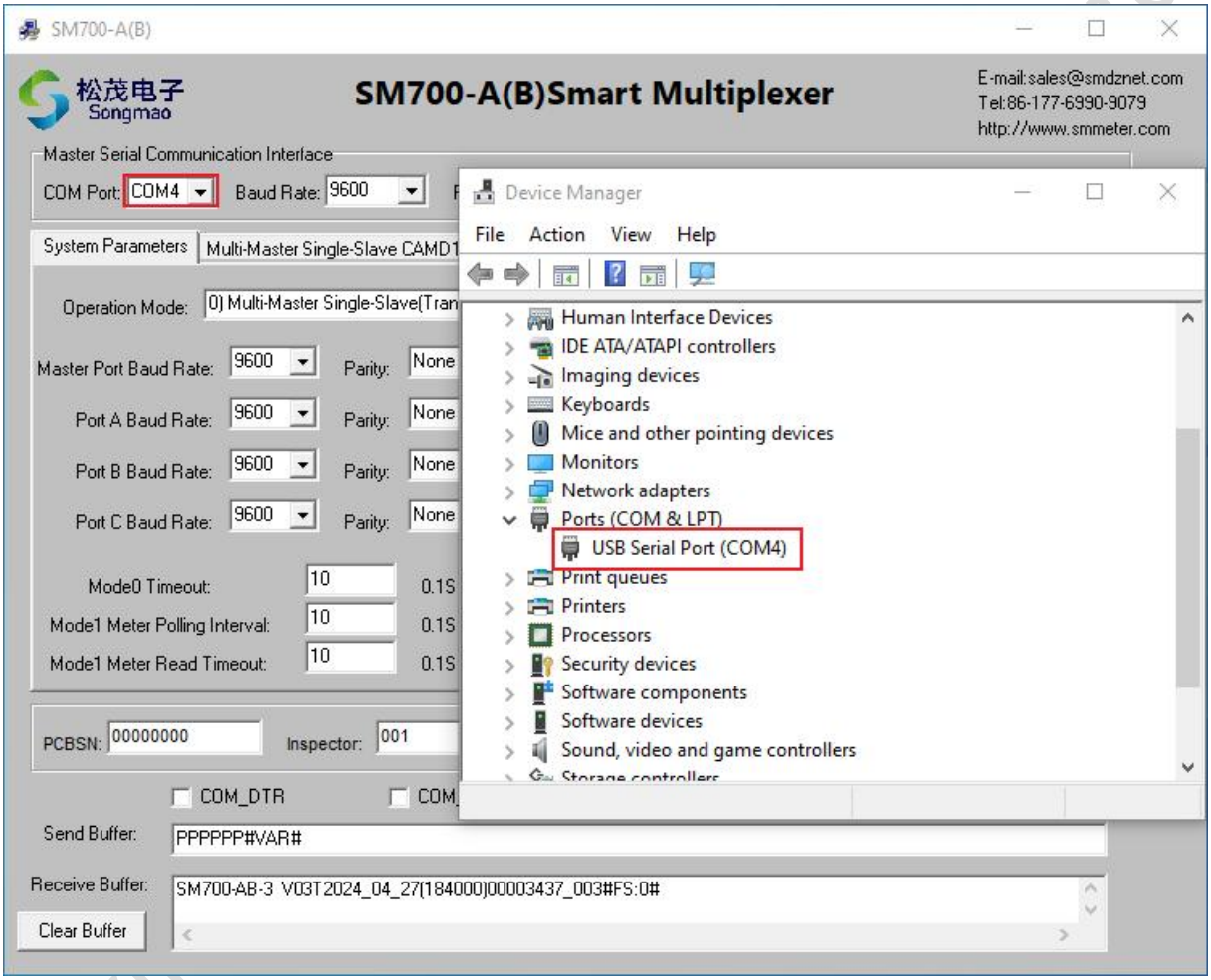
3. Function Introduction of Configuration Software

3.1 Multi-Master Single-Slave(Transparent Transmission Mode)

3.1.1 Communication Connection

Open the configuration software and select the correct port number, baud rate, check bits, and stop bits. Then open the serial port and set the working mode to "Command Mode". Finally, click "Communication Query". At this time, you can see the returned version number in the receiving buffer below, indicating that the communication between the converter and the computer is successful.

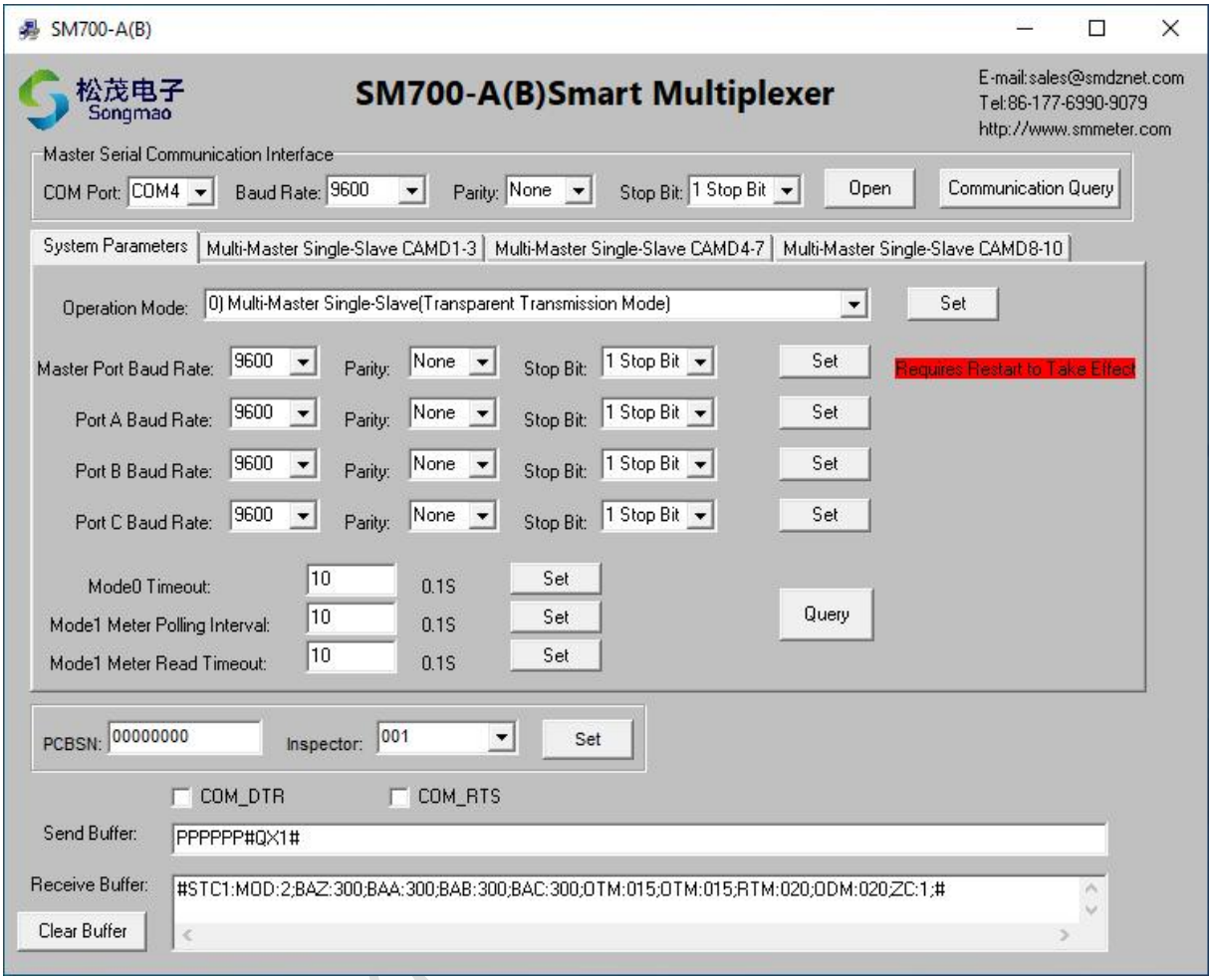
(Note: The port number can be viewed through the device manager of the computer. The baud rate, check bit, and stop bit are 9600, None, and 1 by default.)



Jiaxing Songmao Electronics Co., Ltd. Address : Room 1-201, Science and Technology Entrepreneurship Service Center, No. 79 Jinsui Road, Nanhu District, Jiaxing City, Zhejiang Province China
http://www.smmeter.com Tel:86-573-82623038 Email:sales@smdznet.com

3.1.2 Parameter Setting of Slave Device

Set the communication baud rate, check bit and stop bit of the slave device in the master serial port box according to the RS485/RS232 instrument accessed by the 485/232 channel, and then click "Set" to save the modified parameters.



Jiaxing Songmao Electronics Co., Ltd. Address : Room 1-201, Science and Technology Entrepreneurship Service Center, No. 79 Jinsui Road, Nanhu District, Jiaxing City, Zhejiang Province China
http://www.smmeter.com Tel:86-573-82623038 Email:sales@smdznet.com

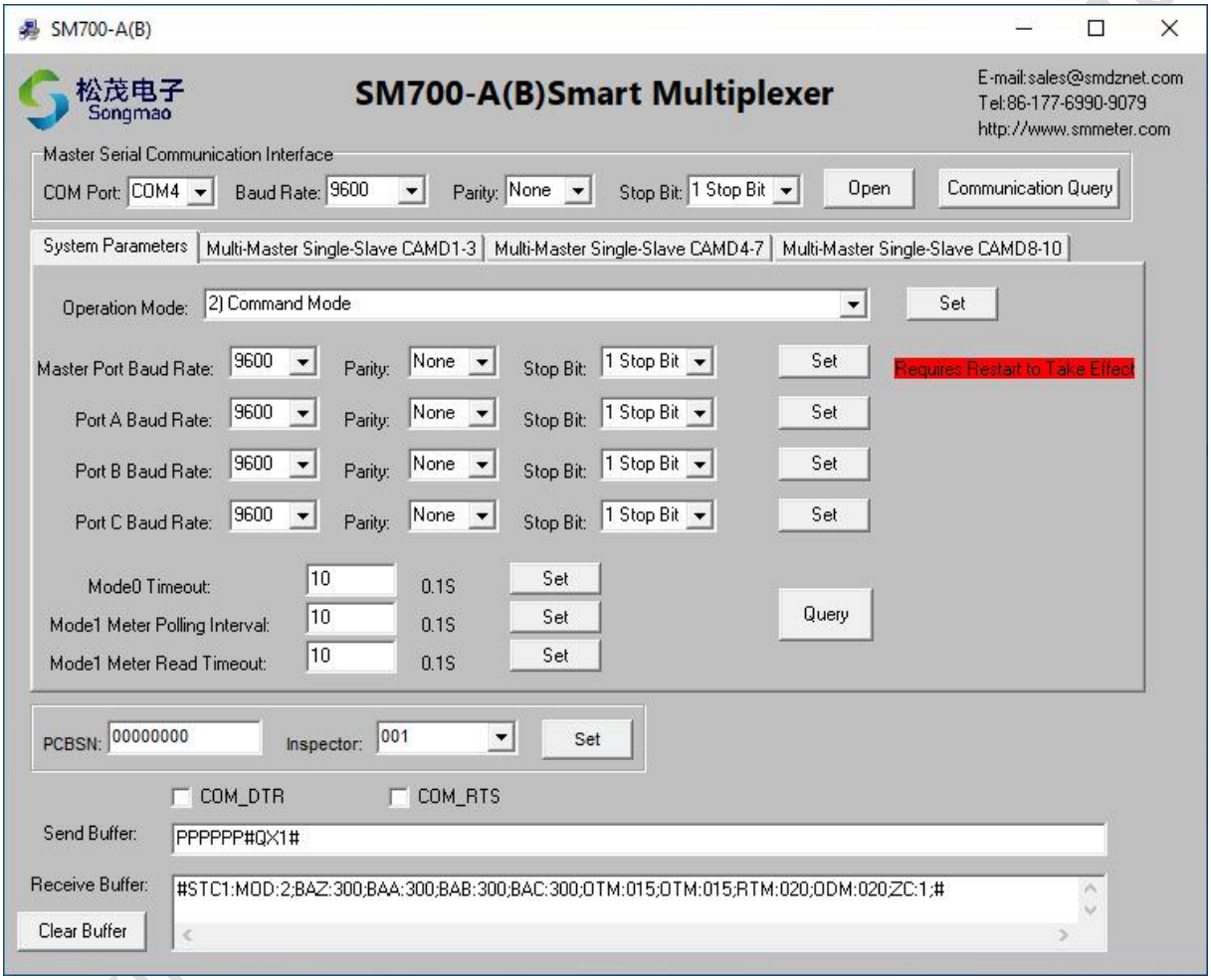
3.1.3 Parameter Setting of Main Equipment

1) Set communication parameters

Set the communication baud rate, check bit and stop bit of the three main devices in the A, B and C serial port boxes respectively according to the monitoring equipment or RTU collector accessed by each 485 channel, and then click "Set" in turn to save the modified parameters.

2) Set mode 0 timeout

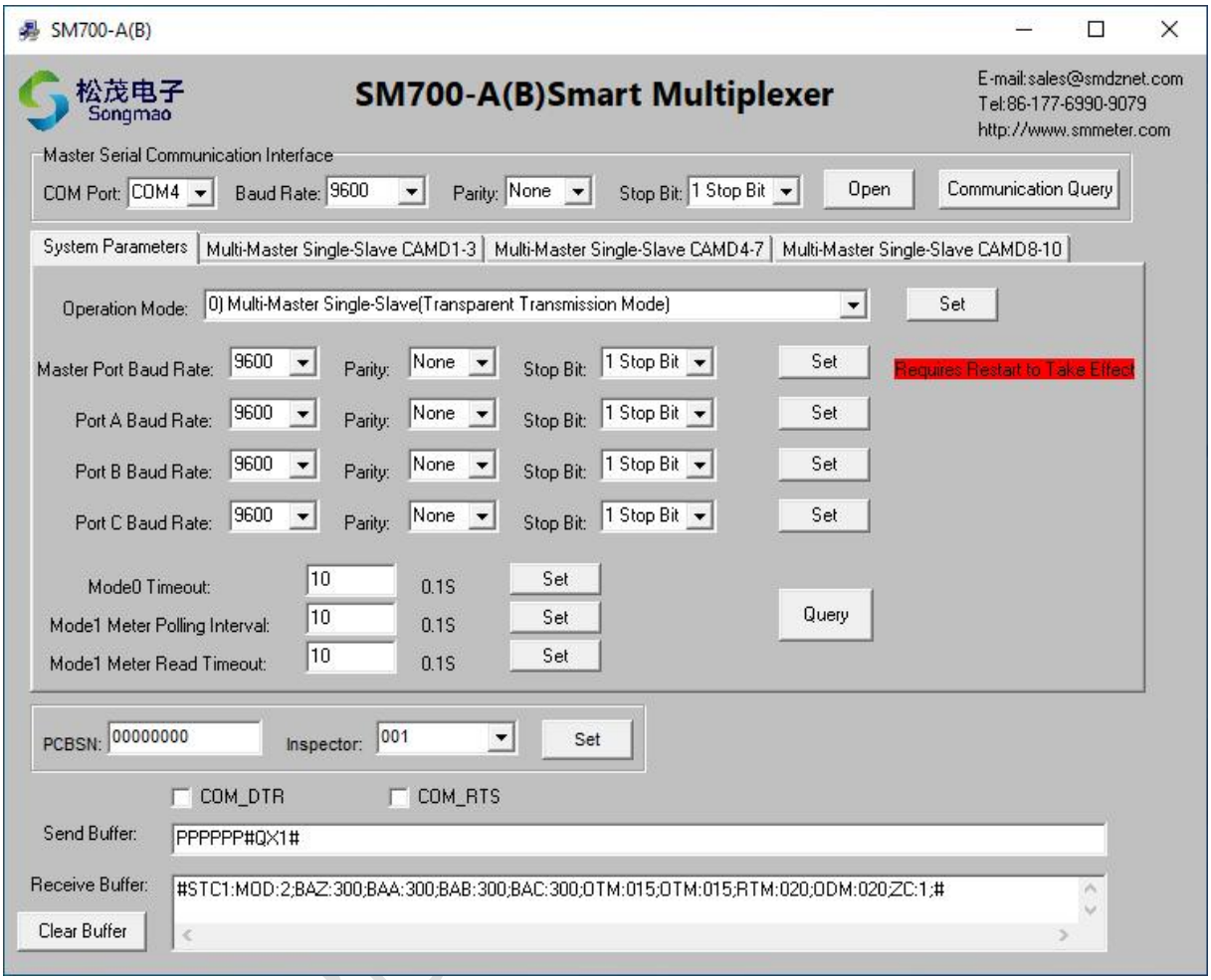
When reading the data, if the instrument does not return the data after the timeout time, it is considered that the communication between the converter and the instrument is not successful. Input timeout time and click "Set", where timeout time = input time * 0.1S.



Jiaxing Songmao Electronics Co., Ltd. Address : Room 1-201, Science and Technology Entrepreneurship Service Center, No. 79 Jinsui Road, Nanhu District, Jiaxing City, Zhejiang Province China
http://www.smmeter.com Tel:86-573-82623038 Email:sales@smdznet.com

3.1.4 Working Mode Settings

After the communication parameters of the equipment are set, set the working mode of the converter as "Multi-Master Single-Slave(Transparent Transmission Mode)" in the "System Parameters" interface. At this point, the converter begins normal operation.



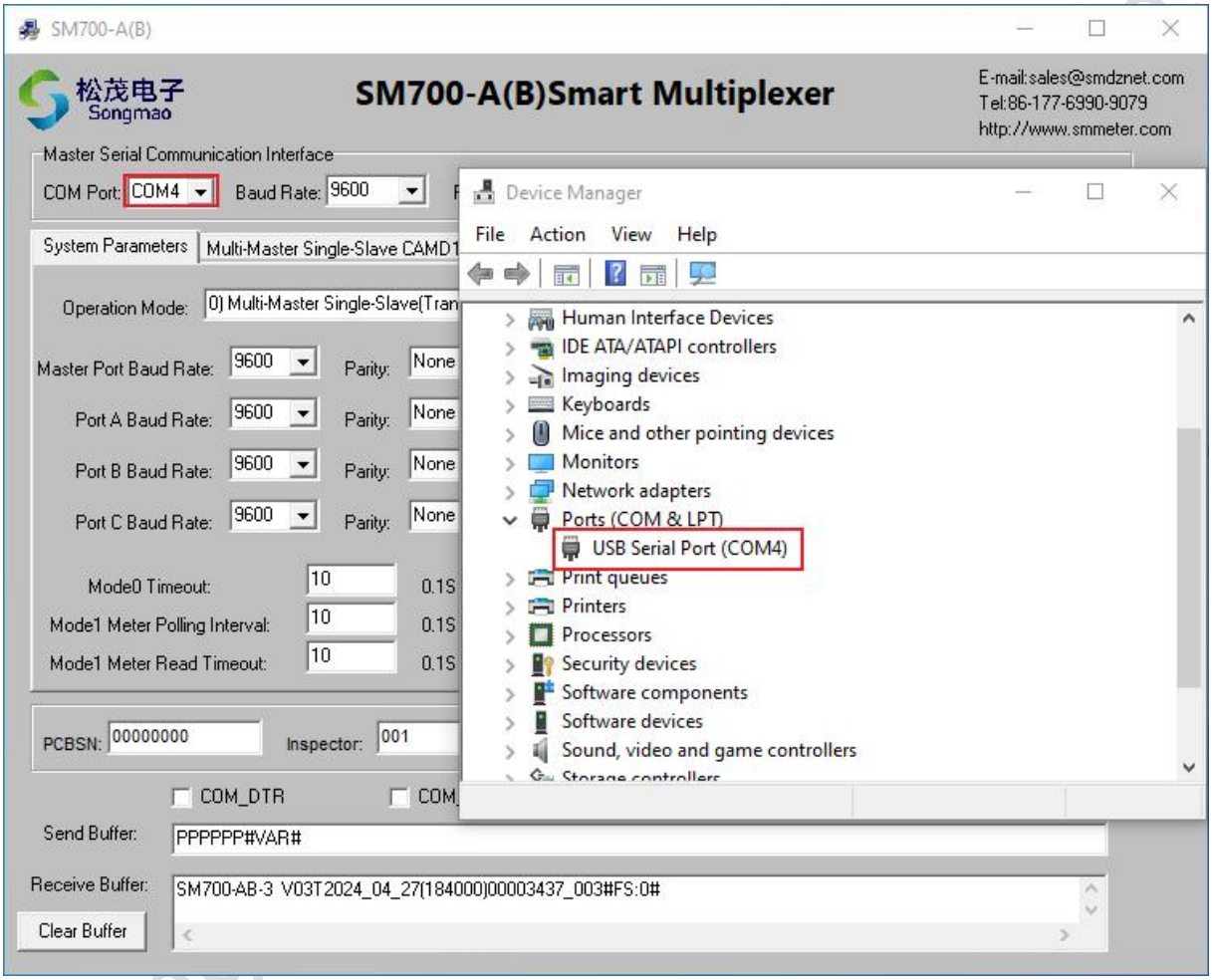
Jiaxing Songmao Electronics Co., Ltd. Address : Room 1-201, Science and Technology Entrepreneurship Service Center, No. 79 Jinsui Road, Nanhu District, Jiaxing City, Zhejiang Province China
http://www.smmeter.com Tel:86-573-82623038 Email:sales@smdznet.com

3.2 Multi-Master Single-Slave(Command Mode)

3.2.1 Communication Connection

Open the configuration software and select the correct port number, baud rate, check bits, and stop bits. Then open the serial port and set the working mode to "Command Mode". Finally, click "Communication Query". At this time, you can see the returned version number in the receiving buffer below, indicating that the communication between the converter and the computer is successful.

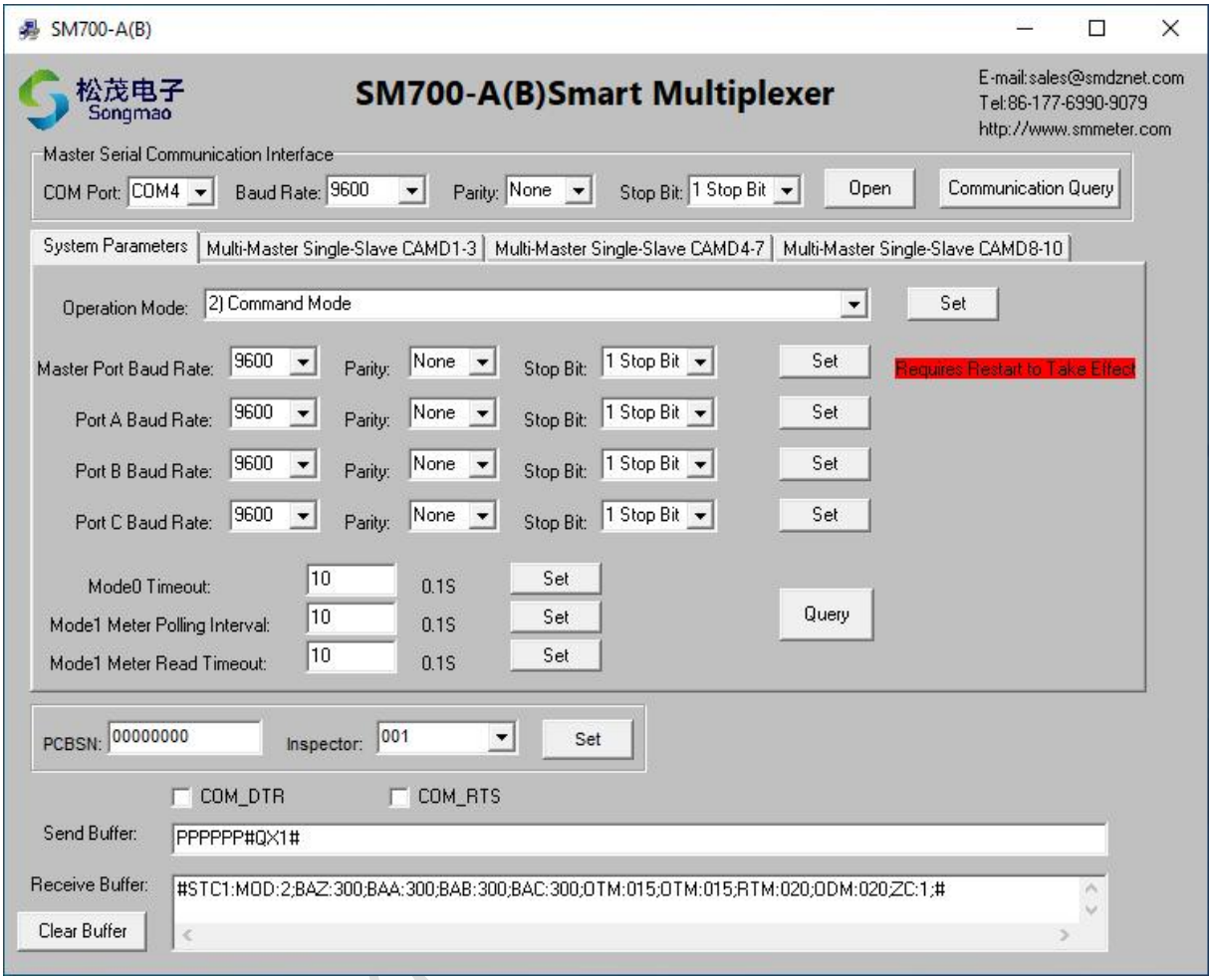
(Note: The port number can be viewed through the device manager of the computer. The baud rate, check bit, and stop bit are 9600, None, and 1 by default.)



Jiaxing Songmao Electronics Co., Ltd. Address : Room 1-201, Science and Technology Entrepreneurship Service Center, No. 79 Jinsui Road, Nanhu District, Jiaxing City, Zhejiang Province China
http://www.smmeter.com Tel:86-573-82623038 Email:sales@smdznet.com

3.2.2 Parameter Setting of Slave Device

Set the communication baud rate, check bit and stop bit of the slave device in the master serial port box according to the RS485/RS232 instrument accessed by the 485/232 channel, and then click "Set" to save the modified parameters.



3.2.3 Parameter Setting of Main Equipment

1) Set communication parameters

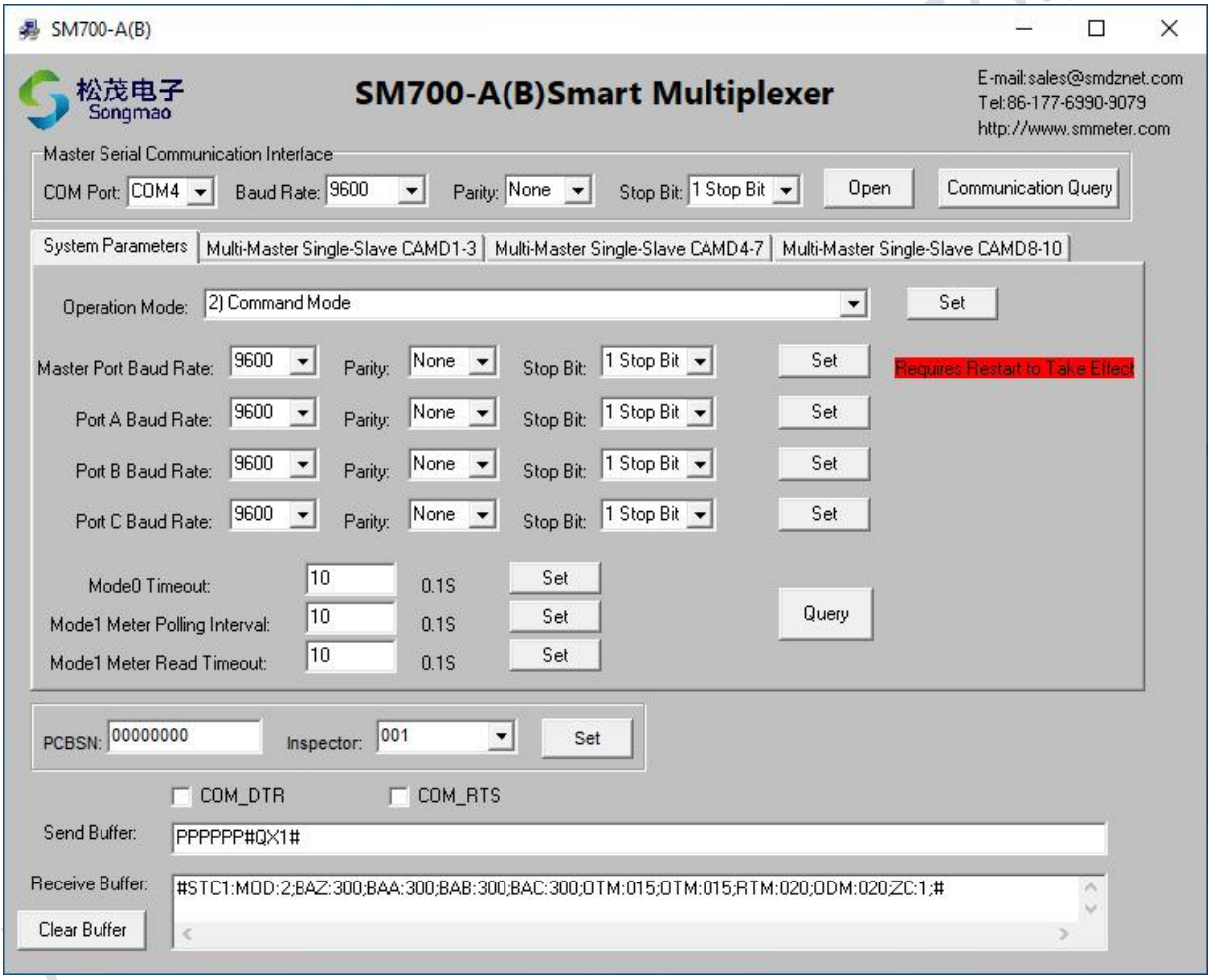
Set the communication baud rate, check bit and stop bit of the three main devices in the A, B and C serial port boxes respectively according to the monitoring equipment or RTU collector accessed by each 485 channel, and then click "Set" in turn to save the modified parameters.

2) Set the interval time of reading instrument in mode 1

The converter sends the command according to the set time interval and reads the data information of the slave device. Enter the interval time and click "Set", where interval time = entered time * 0.1S.

3) Set the timeout time of reading instrument in mode 1

When reading the data, if the instrument does not return the data after the timeout time, it is considered that the communication between the converter and the instrument is not successful. Input timeout time and click "Set", where timeout time = input time * 0.1S.



4) Read instrument command settings

A total of 9 commands can be set. Open the command enable in the corresponding instrument command setting column, input the correct command code and data analysis parameters, and then click "Set".

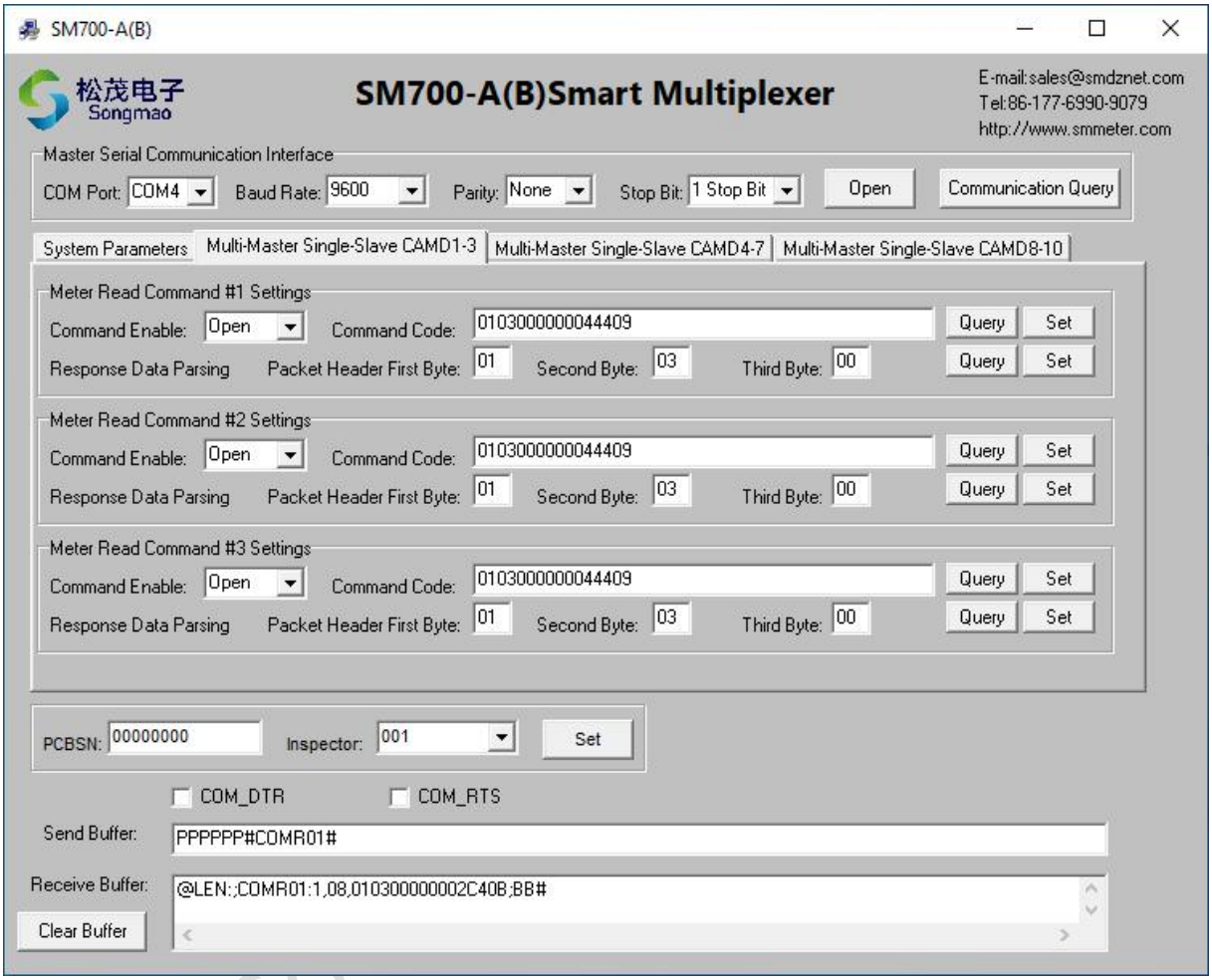
① Command enable: When the converter is required to send the command in the command box to the RS485/RS232 instrument, the command enable shall be set to "Open".

② Instruction code: refers to the instruction code sent when the main equipment reads RS485/RS232 instrument data. Only when the instruction sent by the main equipment is consistent with the set instruction code, the instruction is

Jiaxing Songmao Electronics Co., Ltd. Address : Room 1-201, Science and Technology Entrepreneurship Service Center, No. 79 Jinsui Road, Nanhu District, Jiaxing City, Zhejiang Province China
http://www.smmeter.com Tel:86-573-82623038 Email:sales@smdznet.com

considered valid and the converter sends the instruction to the instrument.

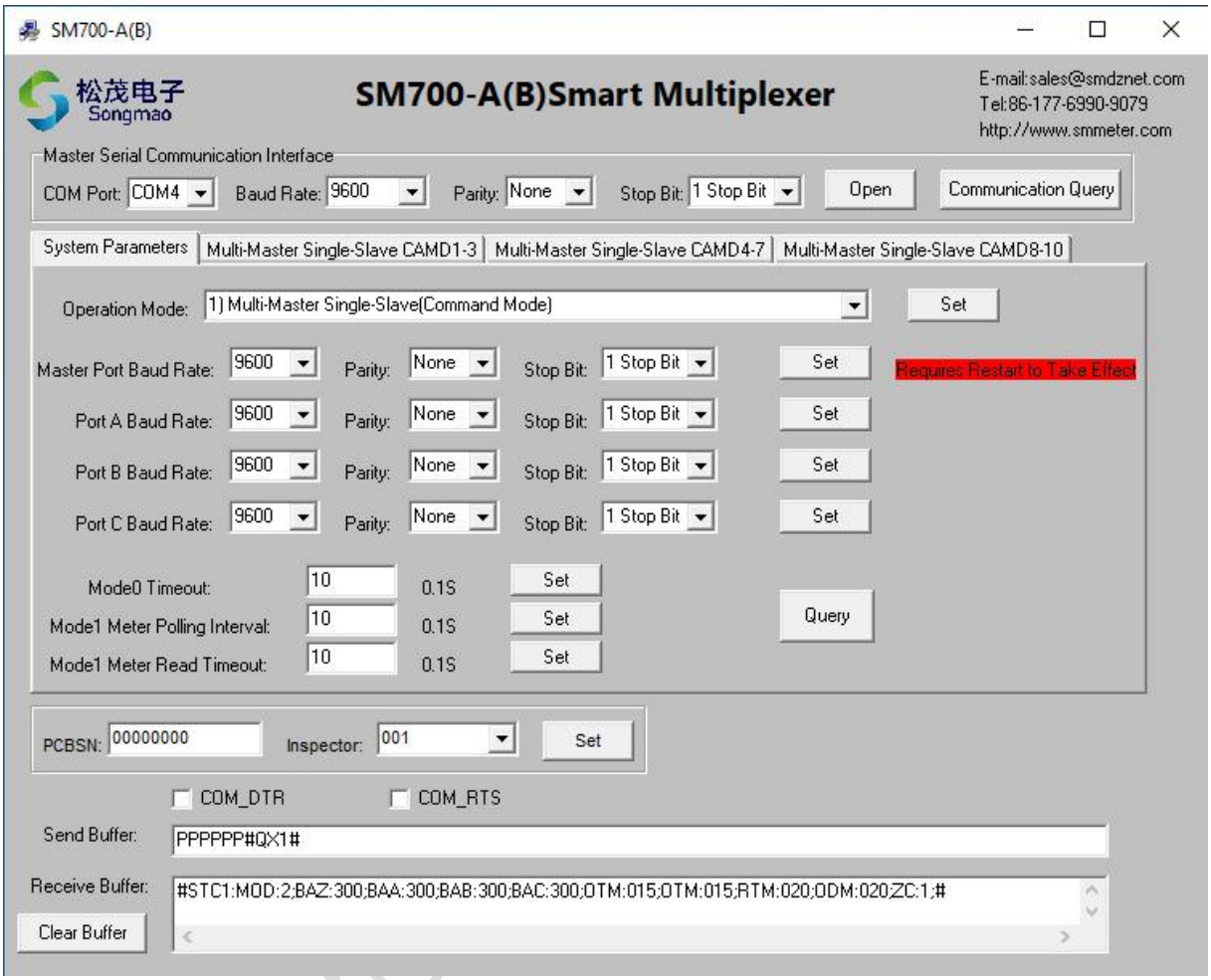
③ Header bytes: The first to third bytes of the header are judgment bytes. Only when the first three bytes of the returned data information are consistent with the first, second and third bytes of the header, the data information is considered to be valid, and the converter will further analyze the data. When the first to third bytes of the packet header are set to 00, it means that the returned data information is not judged, and all the data information is correct by default.



Jiaxing Songmao Electronics Co., Ltd. Address : Room 1-201, Science and Technology Entrepreneurship Service Center, No. 79 Jinsui Road, Nanhu District, Jiaxing City, Zhejiang Province China
http://www.smmeter.com Tel:86-573-82623038 Email:sales@smdznet.com

3.2.4 Working Mode Settings

In the "System Parameters" interface, set the working mode of the converter as "Multi-Master Single-Slave(Command Mode)". If it has been set to "multi-master-slave (passthrough mode)", it needs to be set to "command mode" first, and then set to "Multi-Master Single-Slave(Command Mode)".



Jiaxing Songmao Electronics Co., Ltd. Address : Room 1-201, Science and Technology Entrepreneurship Service Center, No. 79 Jinsui Road, Nanhu District, Jiaxing City, Zhejiang Province China
http://www.smmeter.com Tel:86-573-82623038 Email:sales@smdznet.com

4. Service and Warranty

1. This product is guaranteed for three years under normal use conditions.
2. During the warranty period, our company will provide you with warranty service for any failure caused by product technology.
3. The following circumstances are not within the scope of free warranty:
   ① Products that are disassembled and repaired without the consent of the Company;
   ② Damage caused by external force and other natural disasters.
4. If the user thinks that the product of our company needs to be repaired, please call our company to contact us in time, and we will repair and send it back as soon as possible.
5. The warranty liability is limited to the fault maintenance of the product during the warranty period, and does not assume other responsibilities.

After-sales service hotline: 86-573-82623038
Email: service@smdznet.com