

# The other usage for P8485U card

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## 1. Function description:

One P8485U card can support 8 RS422/RS485 port in PCI system.

## 2. Application description:

In one industrial control environment RS232 interface can connect upto 50 feet. For more longer connection we can use RS485 interface. (we can connect upto 4000 feet for RS485 interface). So there are many equipment to support RS232 interface and RS485 interface.

From software point of view, RS232 interface is full-duplex system. We can send and receive data anytime. RS485 interface is half-duplex system, we can send and receive data with multiple device. But we can only have one device to send data in one period. For the purpose to meet half-duplex requirement we need to have some software rule in every RS485 equipment to follow. Or somebody may send data randomly. Then we can not promise the data integrity in RS485 network.

Unfortunately, Windows system is multi-tasking system. It is not easy for us to control the data transmission time and receive time in serial port. So we need to pay more attention to meet RS485 interface's half-duplex requirement. It means that it is not easy for us to promise no two device to send data simultaneously. Sometimes you may have problem to receive correct data. And this condition is not easy to duplicate and find the solution. And it is not easy to find which equipment to generate such problem. So we need to let RS485 connection similar as RS232 connection. Because there are just two equipment in such connection, so it is very easy to find the problem.

## **The other usage for P8485U card**

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P8485U card can support 8 RS485 ports. We can use each RS485 port to connect with one RS485 equipment only. So we have 8 RS485 port to connect with 8 RS485 equipment. Now we have PC to connect with equipment in one to one condition. Even though we still need to follow the poll & ack structure in software (to meet one port to send in one period). But it is so simple for us to prepare our software. In Windows system we send data in each RS485 port and wait response. Now you just have two possible condition to happen. One is to receive data in time. The other is no data coming in time-out condition. Now you don't need to confirm this data is got from which device (In traditional RS485 network we have multiple RS485 equipment connection. So we need to confirm the data source). Generally PC is the master site to poll slave site. The RS485 equipment is slave site to respond the poll action. So RS485 equipment must send data after receive the poll command from PC site (master port). Then it is very easy for us to promise the data transmit and receive timing. (RS232 and RS422 interface can not promise this timing point, because such device can transmit data anytime).

### **3. Conclusion:**

When we use 8 RS485 port in P8485U card as RS232 to connect with RS485 equipment. We can simplify the software in Windows system to overcome the problem for poll & ack rule. Especially the problem in traditional RS485 connection for one master port to handle multiple RS485 equipment is not easy to duplicate and find the reason. Use above method we can find the problem and solve easily. Because we let RS485 equipment to connect with master port in one to one basis. For any RS485 equipment do not follow the poll & ack rule or our software may not handle such RS485 equipment correctly will be found and solved easily.