# TPORT driver feature

## ■ Introduction

TPORT driver is virtual COM port driver based on TCP connection. User can install this driver to work with APORT or GPORT box. User need to set serial port mode in APORT/GPORT box for TCP Server mode to work with TPORT driver.

## ■ TPORT Driver Feature

1. When we set serial port mode in APORT/GPORT box for TCP server mode. The power on condition for APORT/GPORT box will use the protocol (baud rate, data bits, stop bit, parity) setup in APORT/GPORT box to open the serial port. For example, we may set serial port with 9600bps, 8 data bits, No Parity. Then APORT/GPORT will wait TCP connection from other IP device. If any IP device connected with APORT/GPORT, then we will exchange serial data with TCP packet. It means that APORT/GPORT box may receive TCP packet and send such raw data in serial port. APORT/GPORT box will receive data from serial port and send such raw data as TCP packet.

2. Because we need to use Virtual COM port as standard COM1/COM2 port. So we need to set the target protocol (for example, 19200bps,8 data bits, Even Parity) in Virtual COM port.

3. In standard TCP connection we can only exchange data between serial port raw data and TCP packet. We can't send serial port's control signal condition over IP network.

4. So we will have special TCP packet in TPORT driver to let APORT/GPORT box know this connection is special TPORT driver's connection. When APORT/GPORT box receive special TCP packet for TPORT driver, the standard TCP server mode will change to TPORT mode. In this TPORT mode we can send serial port's control signal condition over IP network. Then Virtual COM port can work as standard COM1/COM2 port.

## ■ TPORT driver consideration

1. In IP connection it is not easy to know the disconnection condition. We may have LAN cable break condition. We may have another PC power off condition. In first condition we may need to wait LAN re-connect. In second condition we may need to cancel the LAN connection.

2. In TPORT driver we will send "heart-beat" packet to APORT/GPORT box every second. If we could not receive any packet from other site (In normal condition TPORT driver will send packet to APORT/GPORT and APORT/GPORT will send packet to TPORT driver within 1 second) within 10 seconds, then we will suggest that IP network disconnected. So TPORT driver will disconnect TCP connection and try to connect again. APORT/GPORT will close current connection and wait the new connection.

3. As above description we know that APORT/GPORT will use protocol setup for serial port firstly. After TPORT driver connect with APORT/GPORT and know the Virtual COM port is opened upon IP network disconnected. Then TPORT driver will set the target protocol for virtual COM port before IP network disconnected.

4. So you may find one problem here. If the serial port protocol setup in APORT/GPORT box (ex, 9600bps, no parity) were different from virtual COM port setup(ex, 19200bps Even Parity), then we may have wrong data received in serial port upon disconnected and connected procedure.

5. So it is best to setup in APORT/GPORT with protocol same as target virtual COM port application software. Then we can have same protocol in serial port upon IP network disconnected and connected procedure.

6. Because TPORT driver will connect with APORT/GPORT box and keep this connection for Virtual COM port opened or not opened condition. So we can't use another PC server to use same serial port in APORT/GPORT. In this condition TPORT driver is suitable for only one dedicated Windows system to use environment. If user need to use APORT/GPORT box in multiple Windows system environment (nobody open virtual COM port in APORT/GPORT and we can use), then TPORT driver is not suitable to use. In this environment we suggest to use RPORT driver.

7. RPORT driver will start to connect TCP port in APORT/GPORT box upon Virtual COM port opened and disconnect upon Virtual COM port closed. So we can have multiple Windows system to use same APORT/GPORT box. But we may have one problem. When you need to use such Virtual COM and start to connect. But you may not connect with APORT/GPORT or other system is using such serial port. Then you can not promise your fully usage in APORT/GPORT box.

## ■ Conclusion

APORT/GPORT box use in TCP server mode can accept any TCP connection and exchange serial port data with TCP packet. TPORT driver is one special TCP connection with APORT/GPORT box to use special packet for Virtual COM driver usage. So it is best to use same serial port protocol setup in APORT/GPORT box and virtual COM port application software. Then we can skip the condition for different protocol used in IP network disconnected and connected procedure.