

Application Note

Telnet COM Port Control Option (RFC2217)

Version 1.4

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2 Introduction

2.1 ezTCP

Although serial communication, Figure 2-1, is known for its simplicity, its limitations are on the short communication distance and the requirement of frequent maintenance, which prevent it from being popularly used in modern computing environment.

By providing Internet(network) connection to serial communication devices, ezTCP enables them to overcome these limitations. The ezTCP, which has TCP/IP stack and serial communication capability, converts serial data to TCP/IP data, and vice versa. "Figure 2-2 TCP/IP Communication" shows the connection between a user serial device with ezTCP and the remote host via TCP/IP network.

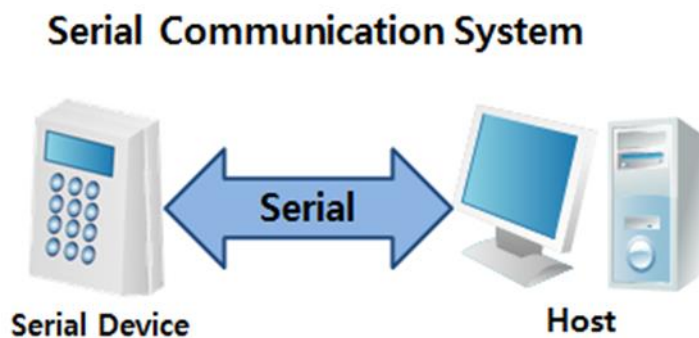


Figure 2-1 Serial Communication

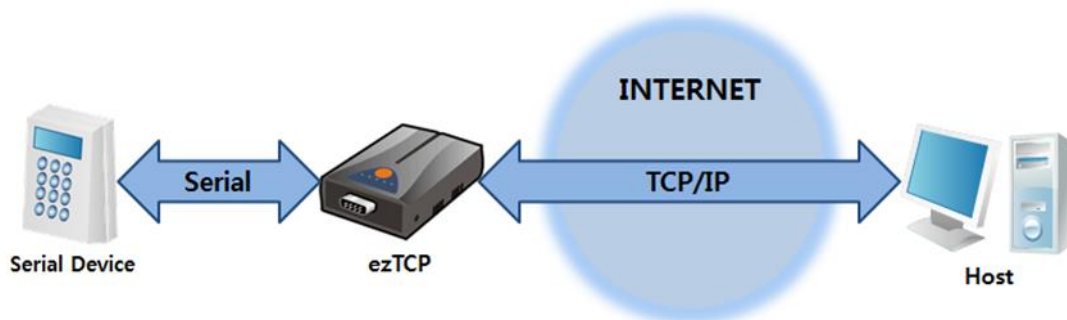


Figure 2-2 TCP/IP Communication

2.2 Connecting Serial Device to a TCP/IP network

2.2.1 Basic Connection

Serial communication mainly uses the data signal of the port, but some user equipment and programs use the data signal as well as the control signal or change the setting of the data signal pin. Since the default setting of ezTCP only processes the data signal of the serial port in the process of converting serial data to TCP / IP data, communication may not be successful if the data signal pin configuration is changed or control signal pin is used during communication.

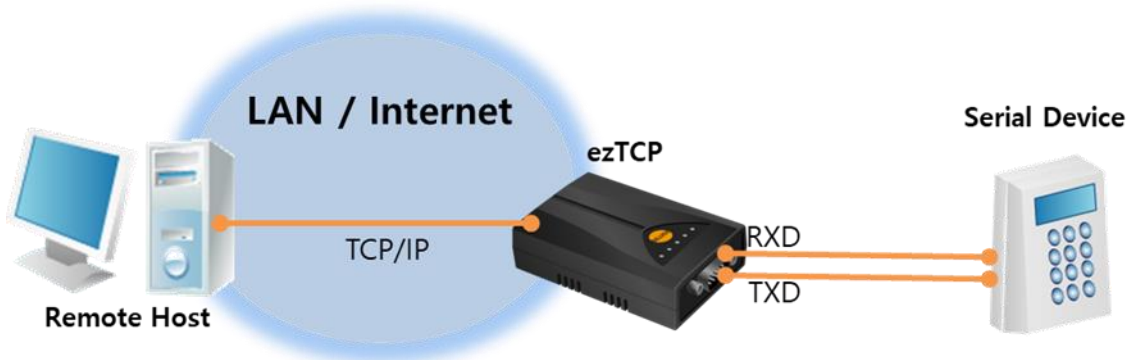


Figure 2-3 Basic Connection

2.2.2 Telnet COM Port Control Option

The Telnet COM Port Control Option works under the Telnet protocol and is defined in RFC2217. It is used to transfer the current state of the serial port on the device to the network or to receive commands from the network and to change the data signal pins setting, baud rate / data bits / parity / stop bits / flow control, and control signal pins, RTS / DTR, of the device.

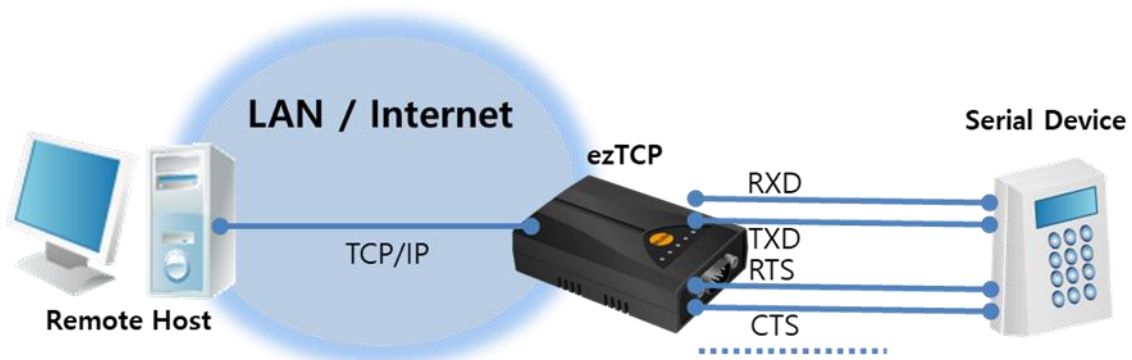


Figure 2-4 Telnet COM Port Control Option

3 Operation

3.1 Basic Condition

The function only works when ezTCP with "Telnet COM Port Control Option" enabled is connected with ezVSP, which is a virtual COM port redirector provided by Sollae Systems, or telnet terminal, which is support "Telnet COM Port Control Option".

3.2 Data Signal

3.2.1 Related parameters

Parameters	Description	Options
Baud Rate	The speed of serial port in bps	9600, 19200, etc
Data bits	The length of data bits	5, 6, 7, 8
Stop bits	The length of stop bits	1, 1.5, 2
Parity	Error detection method	None, Odd, Even, Mark, Space
Flow control	Flow control method	None, Xon/Xoff, Hardware

Table 3-1 data signal related parameters

3.2.2 Operation

At first boot, data signal related parameters are initialized based on the configuration value of them. After that, it depends on the command from the remote host. When the remote host sends the command that control and monitor current parameters, ezTCP applies it immediately and keeps this configuration until next commands arrived.

3.3 Control Signal

3.3.1 RS232 Only

Serial communication can be largely divided into RS232 / RS422 / RS485 according to the standard. Since the control signal pins are defined only for the RS232 standard, the operation related to the control signal will only work if the ezTCP product supports RS232 communication and its serial port is configured to RS232.

3.3.2 RS232

The following are typical RS232 pin specifications for Dsub 9-pin. The control signal pins are the rest except pin number 2, 3, and 5.

Number	Name	Description	I/O	Type
1	DCD	Data Carrier Detect	In	Control
2	RXD	Receive Data	In	Data
3	TXD	Transmit Data	Out	
4	DTR	Data Terminal Ready	Out	Control
5	GND	Ground	-	Data
6	DSR	Data Set Ready	In	Control
7	RTS	Request To Send	Out	
8	CTS	Clear To Send	In	
9	RI	Ring Indicator	In	

Table 3-2 RS232 Specification

3.3.3 Operation

When the input control signal, CTS, DSR, RI and DCD pin, status changes, ezTCP immediately sends its status value to the remote host. Also, when RTS, DTR signal pin control command arrives from the remote host, it is immediately applied to the RS232 port of ezTCP. However, control commands for signal pins that are not used by the product are ignored.

4 Precautions

- This document is based on RFC2217 and describes the function of "Telnet COM Port Control Option" on ezTCP.
- The information presented in this document is subject to change without prior notice.
- It is assumed all contents in this document are accurate and reliable, but it does NOT mean we guarantee it.
- For the detailed information, refer to the RFC2217.

5 Revision History

Date	Version	Comments	Author
2008.11.12.	1.2	○ Initial Release	
2009.07.20.	1.3	○ Replace Korean with English	
2018.04.11.	1.4	○ Change document style form	Andy Lee