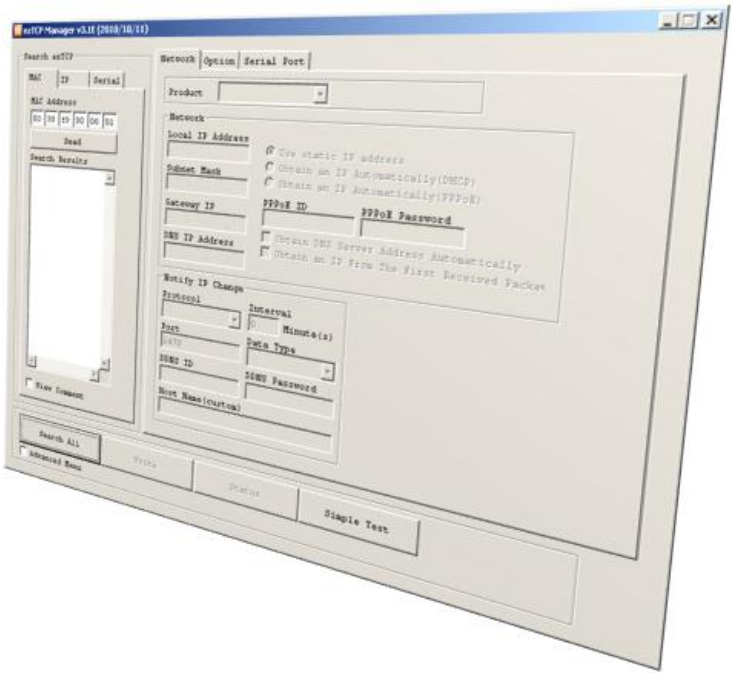
ezTCP Configuration Software

ezManager Manual

Version 1.6
2012-03-22



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Contents

1 Overview

1.1 Overview

In order to use all the ezTCP, environmental parameters are should be set correctly. Not only IP address but all of the serial port parameters (Type, Baud Rate, Data bit, Stop bit, Parity and Flow Control) are needed on ezTCP. There are some ways for configuration and it could be different according to product model. ezManager, one of the ways, is software for easy configuration of those parameters through LAN and serial port. Products, which name is started with "CSE", "CIE" or "CSW", are available on this program. The software has been improvement and the latest version, released in January 2010, is 3.0H. Please note that this document is based on the version.

☞ ***ezManager is available on Microsoft Windows (98, 98SE, 2000 pro, ME, XP Pro/Home, Vista) and it wouldn't be work well on old operating systems.***

1.2 Available products

Table 1-1 available products

Model	Available Interfaces		Product Type	Requirement
	LAN	Serial		
CSE-M32	○	○	Serial to Ethernet	Connection over Ethernet, wireless LAN or Serial
CSE-M73	○	○		
CSE-H20	○	○		
CSE-H21	○	○		
CSE-H25	○	○		
CIE-M10	○	○		
CIE-H10	○	○		
CSE-M53	○	○		
CSE-H53	○	○		
CSE-H55	○	○		
CSW-H80	○	○	Serial to WLAN	
CSW-M83	○	○		
CSW-M85	○	○		

2 Window Composition

2.1 Initial Appearance

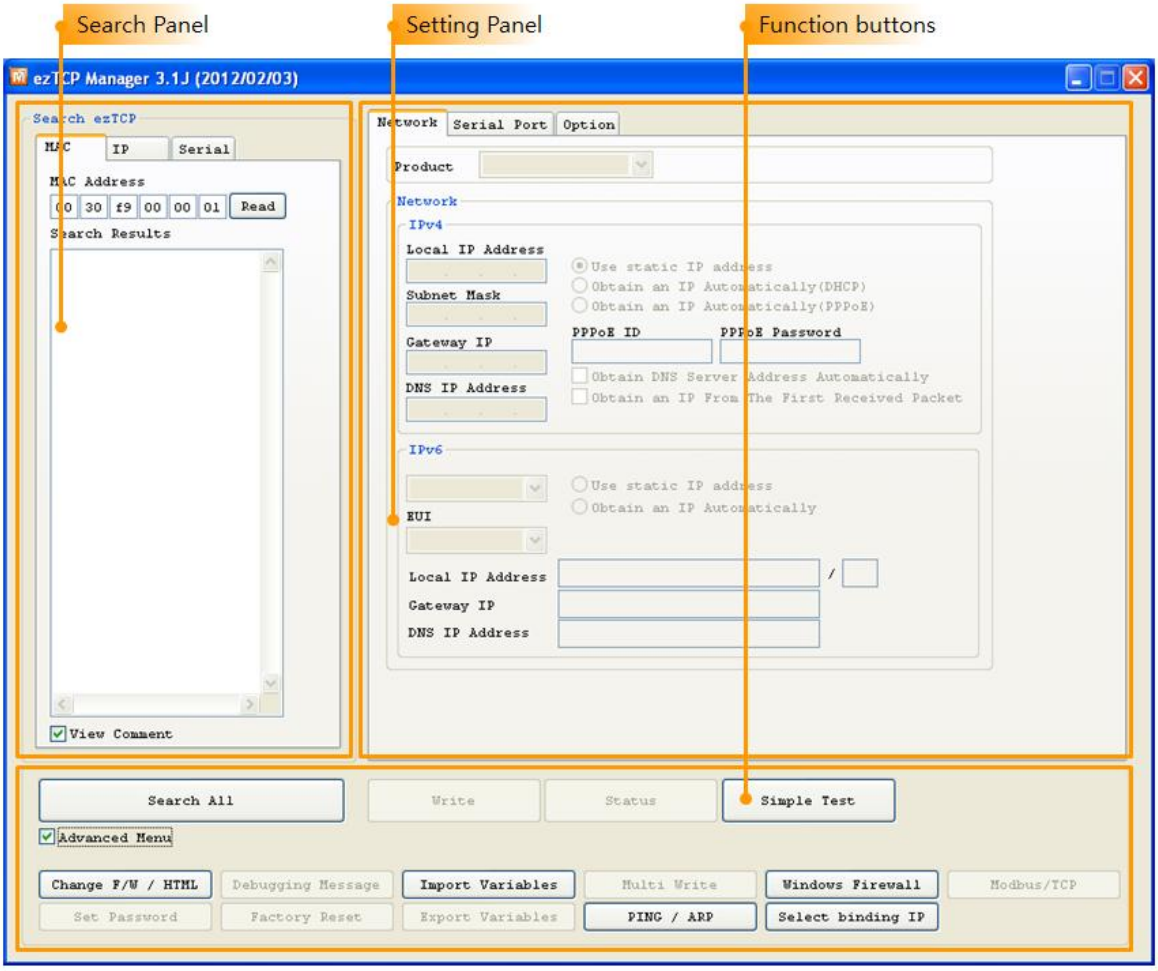

Figure 2-1 initial appearance of ezManager

- Search Panel

  To configure the environmental parameters, the setting should be loaded to ezManager. You can read those values from both Ethernet using MAC address or IP address and serial using RS232. This panel is for those jobs.

- Setting Panel

  Loaded value of each parameter is shown in this panel. According to product type, three or four tabs will appear among the following five tabs: [Network], [Option], [Serial Port], [WLAN] and [I/O Port].

- Function buttons

  Every function button which has a special function is located in this panel. It is

composed of 4 basic buttons and 9 advanced buttons. The [Advanced Menu] option is for showing or hiding the advanced buttons.

3 Search Panel

3.1 MAC Tab

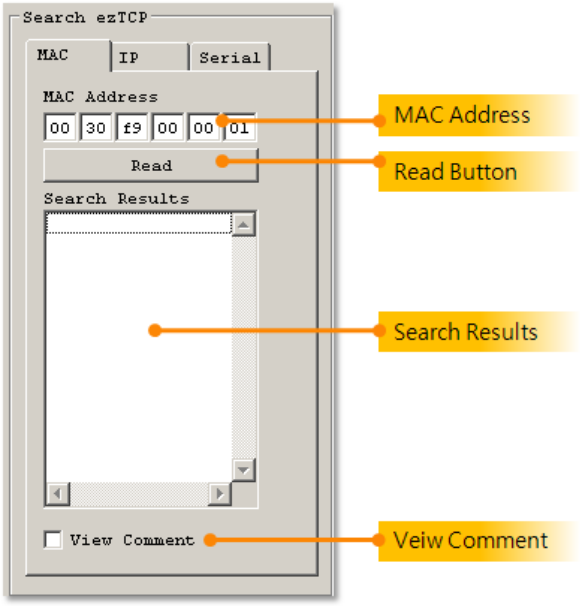

Figure 3-1 MAC tab

Use MAC tab when you want to broadcast the search packet in UDP.

- MAC Address

  This area is for MAC address of ezTCP. [Read] button let you search the product. If you click one of the products which are listed on the [Search Results], the MAC address of the product is displayed.

- Read

  This button let you search an ezTCP which has the same MAC address with value of [MAC Address] again.

- Search Results

  All the searched products are displayed in this box with their MAC addresses.

- View Comment

  This option is for displaying comments instead of the MAC addresses. It is only valid for products which have value in comment filed.

3.2 IP Tab

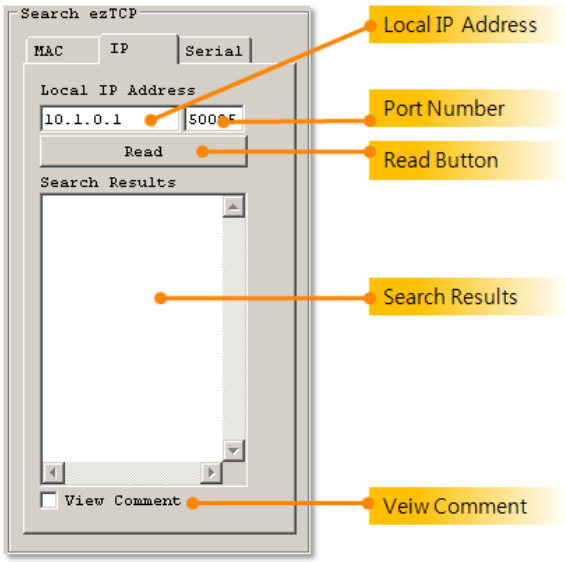

Figure 3-2 IP tab

Use IP tab when you want to send a search packet in UDP to an ezTCP.

- Local IP Address

  This filed is for an IP address of host name of an ezTCP which you want to search.

- Port Number

  ezManager sends a UDP packet to an ezTCP with this port number.

- Read Button

  This button is for send the search packet in UDP.

- Search Results

  The searched product is displayed in this box with its IP address.

- View Comment

  This option is for displaying comment instead of the IP address. It is only valid for products which have value in comment filed.

3.3 Serial Tab

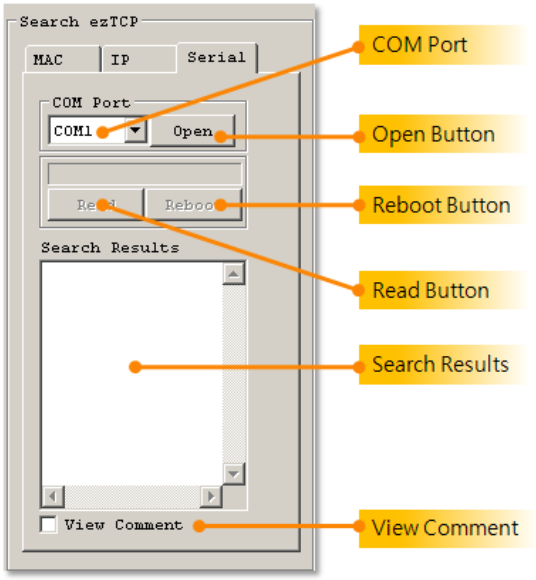

Figure 3-3 serial tab

All the products using ezManager are possible to configure environmental parameters by serial as well as the Ethernet.

- COM Port

  This is a combo box for choosing a COM port.

- Open Button

  Press this button for open the selected port.

- Read Button

  When you press this button, ezManager send the read request message to ezTCP.

☞ ***Note that ezTCP should operate as [Serial Configuration mode] before the setting.***

- Reboot

  [Reboot] button let the ezTCP reset to change the mode to normal operation ending the serial configuration mode.

☞ ***All the products are entered normal mode when you press this button in the serial configuration mode.***

- Search Results

- View Comment

4 Setting Panel

4.1 Network Tab

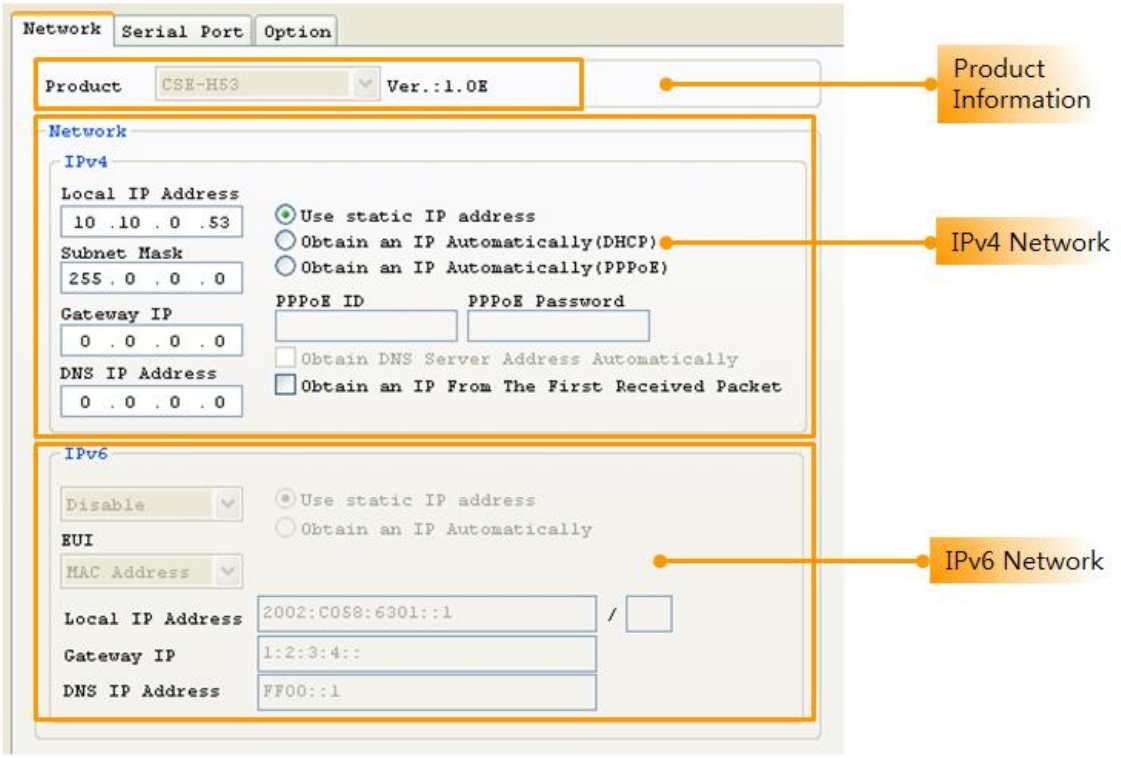

Figure 4-1 network tab

4.1.1 Product

Model name of selected product in the result box is displayed hear. The version of firmware is shown by the model name. Those values are displayed only.

4.1.2 IPv4 Network Tab

This tab is for setting parameters which are related with IP address.

- Local IP Address

  This is a text box for the IP address of ezTCP. When you want to use DCHP or PPPoE on the [Option] part, [Local IP Address] will be assigned automatically.

- Subnet Mask

  Subnet Mask should be set on this text box.

- Gateway IP

Gateway IP address of user's network should be set on this box. Gateway is needed to be connected with other network. If it isn't correct, Internet or inter network communication will be not possible.

- DNS IP Address

  Domain Name Service (DNS) is a technique for using Host Name instead of IP address because it's hard to remember the address. This box is for entering IP address of DNS server.

- Obtain an IP From The First Received Packet (ARP)

  This option is for receiving IP address automatically from the first packet which is arrived. ezTCP use the destination IP address of the packet as its Local IP address temporarily.

- Obtain an IP Automatically (DHCP)

  Receive its IP address from Dynamic Host Configuration Protocol (DHCP) server automatically.

- Obtain an IP Automatically (PPPoE)

  Receive its IP address from Point to Point Protocol over Ethernet (PPPoE) server automatically.

- PPPoE ID

  Input the PPPoE ID of your account here.

- PPPoE Password

  Input the PPPoE password of your account here.

- Obtain DNS Server Address Automatically

  When using PPPoE or DHCP, you can get the IP address of DNS server by checking this option.

4.1.3 IPv6 Network Tab

User can configuration in case of support to IPv6. For more information you want to know, refer to the technical document

☞ ***[Download]>>[Technical Documents]>>[IPv6 Guide]***

4.2 Option Tab

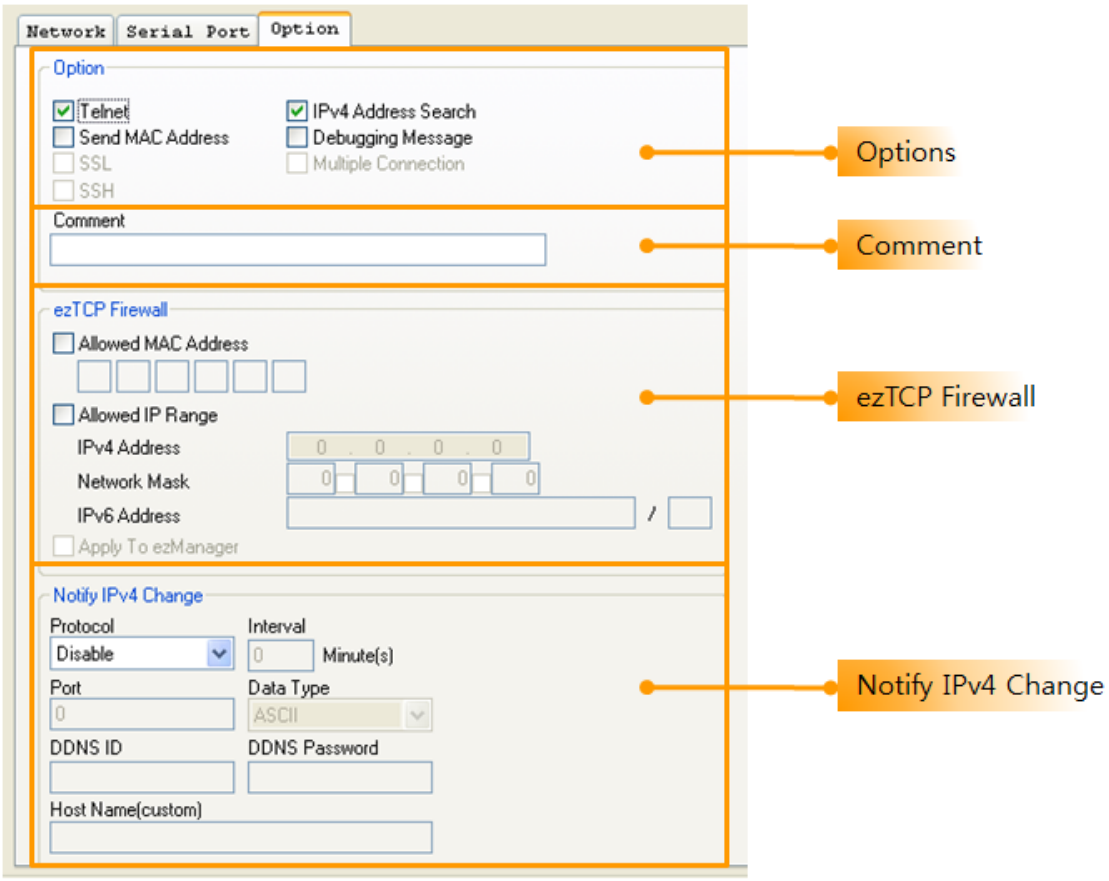

Figure 4-2 option tab

4.2.1 Option

Additional or special functions could be configured on this tap. Since each ezTCP has different options, refer to the manuals for more information.

- Telnet

  This option lets you log in the ezTCP through telnet protocol and you can monitor the status of the ezTCP.

- IP Address Search

  This is an option for searching ezTCP using UDP unicast in [IP] tap. If this option is disabled, it does not work to search ezTCP in [IP] tap by an IP address. Therefore, we recommend that this option keep checked.

- Send MAC Address

  For using this option, a device sends its MAC address right after that the TCP connection is made. All products, which use ezManager as its configuration tool, will

support this option soon.

- Debugging Message

  While this option is checked, the [Debugging Message] button will be activated. The debugging messages are sent on a port whose number is UDP 50006. To capture the messages, press the [Debugging Message] button.

- SSL

  Secure Socket Layer (SSL), which is a security protocol, could be configured here.

- SSH

  Secure Shell (SSH), which is a security protocol), could be configured here.

- Multiple Connection

  When using this function, a multiple connection is allowed in T2S mode. There are two models which support this option so far. CSE-H25 and CSE-M73 can make 3 connections at a time. For more information about this option, we've offered a technical document on our website.

- Comment

  Users are allowed to give a comment on each product by this text box. This helps discerning products. In addition, if the [View Comment] option located under [Search Results] box, the comments are shown on the box.

4.2.2 ezTCP Firewall

This part is for restriction from hosts who are not supposed to access to the product.

- Allowed MAC Address

  ezTCP allows a device to be connected with configured MAC address on this box.

- Allowed IP Range

  When users want to allow connection with one or more devices, this option would be used. Input an IP address and check the [Network Mask]. The below examples will be help to set it.

Table 4-1 examples of setting [Allowed IP Range]

IP Address	Network Mask	Range of IP address allowed to connect
10.1.0.1	255.0.0.0	10.1.0.1 ~ 10.255.255.254
10.1.0.1	255.255.255.0	10.1.0.1 ~ 10.1.0.254
192.168.1.4	255.255.255.255	192.168.1.4

- Apply to ezManager

This is an additional option of limitation. If this option is enabled, any devices without configuration at [Allowed MAC Address] or [Allowed IP Range] can't search the ezTCP through ezManager. This option could be available under condition that one of ezTCP Firewall options has been checked at least.

4.2.3 Notify IP Change

Under environment of using DHCP or PPPoE, ezTCP can communicate on TCP/IP with its changed IP address or host name by notification of it.

- Protocol

  This part is for selecting a protocol for the IP notification. Three protocols (DDNS, TCP and UDP) are available. In case of DDNS, you have to make account of DynDNS in the web site. And you can use TCP and UDP instead of DDNS with using own server.

- Interval

  Notification period is to be configured on this box. The unit is a minute.

- DDNS ID

  [DDNS ID] means ID of the account on the DynDNS homepage.

- DDNS Password

  [DDNS Password] means password of the account on the DynDNS homepage.

- Port

  When using TCP or UDP, ports number is needed. This box is for entering the port number and it would not active under DDNS.

- Data Type

  When using TCP or UDP, data type is needed. Two types are supported and they are ASCII and Hexagonal.

- Host name(custom)

  This means an IP address or a host name of the custom server for management of IP address information.

- Host name(DynDNS)

  When DDNS is selected for notifying IP address, this would be a text box for host name of ezTCP. Before using this, host name should be registered on the account. [Host name (custom)] would be activated when TCP or UDP is selected.

4.3 Serial Port Tab

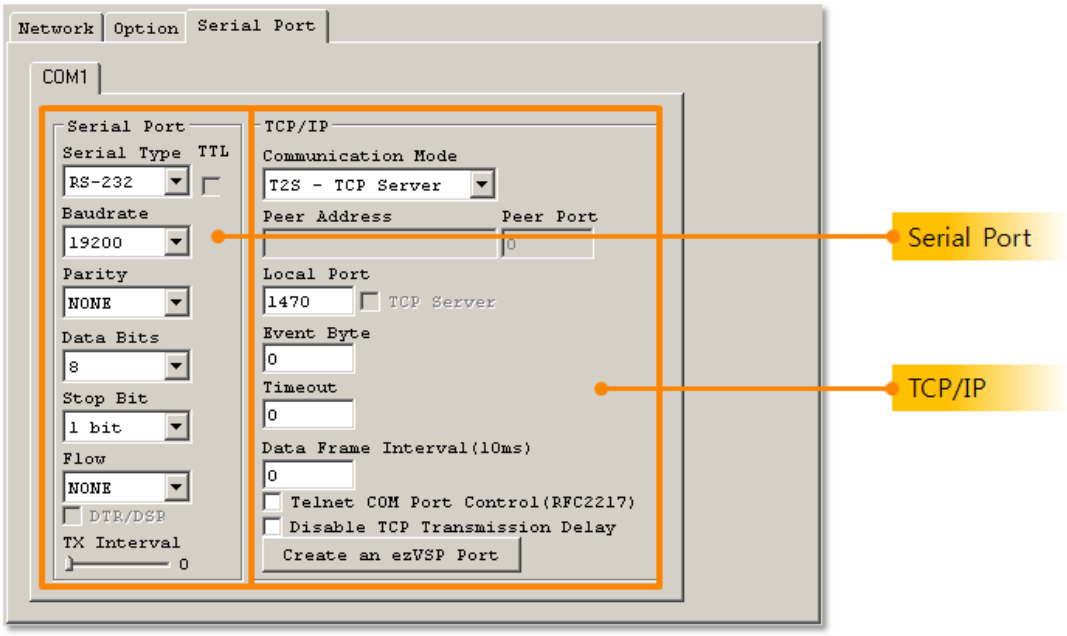

Figure 4-3 serial port tab

4.3.1 Serial Port

This part is for configuration about serial port and TCP/IP connection.

- Serial Type

You can select a type of serial communications in this combo box. All the ezTCP has RS232 interface, and some of them are available to use RS422 (Full duplex), RS485 (Half duplex) and TTL (Transistor to Transistor Logic).

- Baud Rate

Select a Baud rate for serial data communication rate. The unit is bit/sec.

- Parity

You can make decision if you use the parity bit or not by this option. There are five options. (None, Even, Odd, Mark and Space)

Table 4-2 options of parity

Type	Description
None	Don't use parity bit
Even	Add a parity bit to make number of 1 to be even number
Odd	Add a parity bit to make number of 1 to be odd number
Mark	Add a parity bit of 1
Space	Add a parity bit of 0

- Data bit

  Make decision about the length of data bits. The options are 5, 6, 7 and 8 bits. The default value is 8.

- Stop bit

  Choose the length of stop bit. The options are 1, 1.5, 2 bit(s). The default value is 1.

- Flow Control

  Select a method of flow control. The options are None, RTS/CTS and DTR/DSR.

Table 4-3 options for flow control

Flow Control Type	Description
None	Don't use any Flow Control
RTS/CTS	Using RTS/CTS pins for Flow Control
Xon/Xoff	Using DTR/DSR pins for Flow Control

4.3.2 TCP/IP

- Communication mode

  Select a communication mode of ezTCP. The options are T2S (as a TCP server), COD (as a TCP client), ATC (TCP server/client) and U2S (UDP). In case of I/O controller, Serial Modbus/TCP would be added in the options.

☞ ***ezTCP I/O controllers have another communication mode which is named "Serialized Modbus/TCP."***

- TX Interval

  When transmitting data received from a network to the serial device, ezTCP cause some delays between each data. This function is useful, when the user's serial devices has any buffer or processing speed is too slow. The unit is a Byte and that means ezTCP cause delays for the time to transmit a Byte between every Bytes.
  For example, assume a condition that the [Baud Rate] is 19,200 bps, [data bit] is 8 bits, [stop bit] is 1 bit, no [parity bit] and [TX Interval] is 5 Bytes. In this case, the time of transmitting one Byte will be 10/19,200 sec (about 520.83㎲). So, when 5 Bytes duration is 50/19,200 sec (about 520.83×5 ≒ 2.6ms). Therefore the intervals between every Byte would be 2.6ms.

- Peer Address

  This box is for setting IP address of TCP server who should be connected with your ezTCP. This could be set when your product is in the COD or U2S communication mode. In U2S mode, [Peer Address] means destinations of UDP packet which will be sent. It could be an IP address or host name.

- Peer Port

  When user's ezTCP is in TCP client mode (COD), the server's local port which is listening should be configured at this box. In U2S mode, it means local port of the destinations of data which will be sent.

- Local Port

  In case of T2S mode (TCP server), this item is port number which will listen. When the ezTCP is set as U2S mode, it will be a port number where the data will be come into.

- Timeout

  When ezTCP is using TCP protocol (T2S, COD or ATC mode), if this parameter's value is not set to zero, the connection will be dead after the amount of time is passed (unit: second).

- Event Byte

  [Event Byte] is a parameter which can decide the point of time when ezTCP try to request connection with TCP server. If the amount of data is received from serial port, ezTCP sends server request packet for TCP connection. In U2S mode, this item means the packet size which is supposed to be sent at once. For example, if the value is set to 5, the size of a UDP packet block will be 5 Bytes.

- Data Frame Interval

  Before sending data from the serial port to Ethernet, ezTCP gathers data in its buffer. If there is no data during the time which is configured in the [Data Frame Interval], ezTCP will send data to the network. In case the value is set to 0, data will be sent immediately. The unit is 10ms and this is operated more accurately with checking [Disable TCP Transmission Delay] option.

- Telnet COM Port Control Option (RFC 2217)

  This option is defined in the RFC2217. If this option is set, ezTCP transmits serial input signals (CTS, DSR) to the peer host and set values (RTS, DTR, Baud rate, Data bits, Parity, Stop bit) in to its serial ports from the peer host.

- Disable TCP Transmission Delay

  By using this option, ezTCP transmit received data to the network right after the data have come from the serial port.

- Create an ezVSP Port

  Users can create ezVSP port based on the present values of the product. This is available on circumstance that the ezVSP is running. By using ezVSP, users allowed to use their serial communication program, which have been used, without modification. That means ezVSP is another ezTCP which is installed and operated on your PC.

☞ ***For more information you want to know, refer to the technical document "ezVSP 3.x User's Manual" on the [Support] >> [Download] >> [Technical Documents] menu of our web site.***

4.4 Wireless LAN Tab

[Wireless LAN] tab appears in case of ezTCP Wireless LAN models. Parameters about wireless LAN could be configured in this tab.

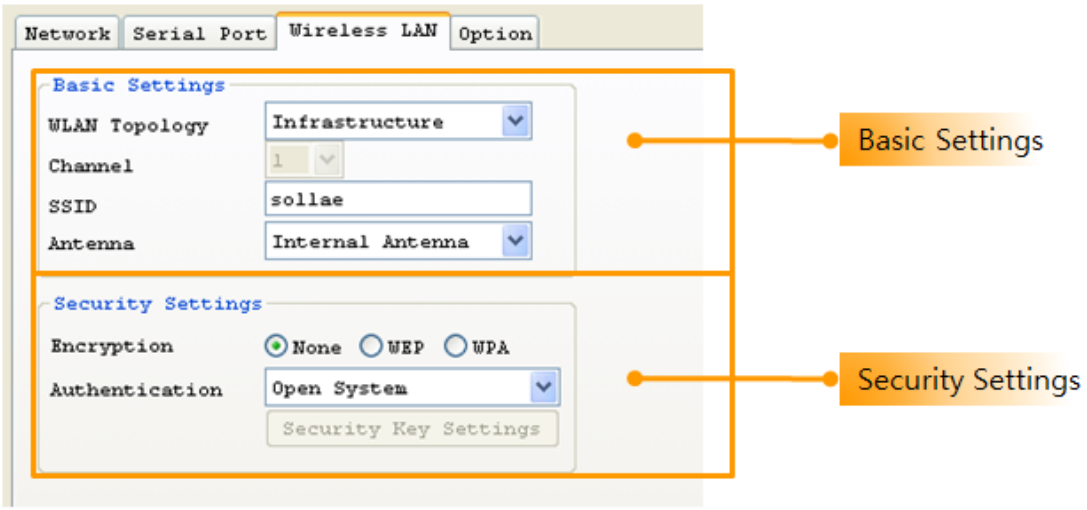

Figure 4-4 wireless LAN tab

4.4.1 Basic Settings

- WLAN Topology

  Select a Topology of wireless LAN. Either Infrastructure or Ad-hoc mode could be set. Infrastructure mode contains an Access Point (AP) so it is possible to connect ezTCP to Ethernet. On the other hand, Ad-hoc mode does not need an AP. A network of this mode needs just wireless devices.

- Channel

  In Ad-hoc mode, select a channel which is used to form a wireless link. If you have to set two or more networks in the same space, we recommend that you space more than 4 channels between each of it. This helps for avoiding the interference.

- SSID(Service Set Identifier)

  SSID is for identification of wireless networks. Wireless devices should have the same SSID for communication. In infrastructure mode, the SSID will be decided by Access Point. Thus, ezTCP which is in the network should have the AP's SSID. The default value is "sollae".

- Antenna

  This option is for CSW-M85 to select either the chip antenna or external one.

4.4.2 Security Settings

- Encryption

  Choose one of the below security protocols.

Table 4-4 available items of the encryption

Protocol	CSW-H80/M83	CSW-M85
None	No security set	No security set
WEP	Coding by WEP (64 / 128 bit KEY)	Coding by WEP (64 / 128 bit KEY)
WPA-PSK	Coding by WPA-PSK - TKIP, 8~32 bytes KEY	Coding by WPA-PSK -TKIP, 8~63 bytes KEY -AES, 8~63 bytes KEY -TKIP/AES, 8~63 bytes KEY
WPA2-PSK	Coding by WPA2-PSK - AES, 8~32 bytes KEY	Coding by WPA2-PSK -TKIP, 8~63 bytes KEY -AES, 8~63 bytes KEY -TKIP/AES, 8~63 bytes KEY

- Authentication

The authentication could be divided as two big parts. The one is Open-System and the other one is Shared-Key. The first one is just consist of two frames which are request and response. There is no checking process. The second one uses shared key for the authentication. This is valid for only WEP.

Table 4-5 methods for the authentication

Method	Description
Open System	Use request and response messages
Shared Key	Use shared key
Auto	Use automatic configuration

4.5 I/O Port Tab

This is just for only remote I/O controllers. In this tap, all the parameters could be set for monitoring and controlling digital input and output.

4.5.1 Basic Settings

Select protocols for monitoring and controlling digital I/O ports.

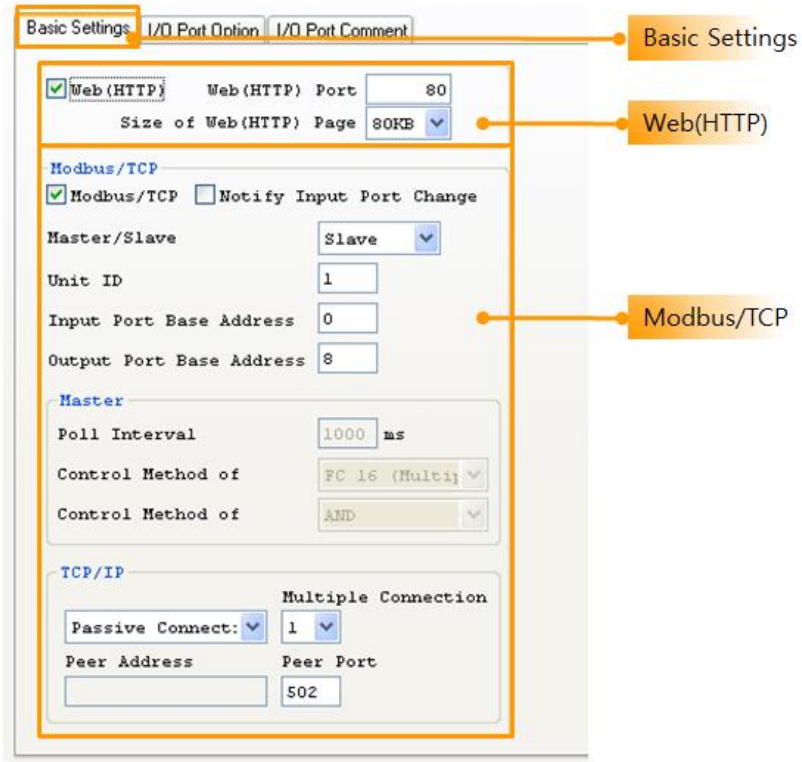

Figure 4-5 I/O port tab

- Web (HTTP)

If you want to monitor and control the remote I/O device through the HTTP using web browser, you should check this option. Just input the IP address or host name of the controller on the web browser.

- Web (HTTP) Port

  The default port number of HTTP is 80. However, users can set the port number to another value in this box.

- Size of Web (HTTP) page

  When controlling an I/O model, you can decide the memory size where the HTML files will be stored. Default is 80KB and 96 or 112KB can be set. We recommend using 80KB because to set another values has chance to cause problems when download F/W in the future.

- Modbus/TCP

  Digital input and output ports are controlled by Modbus/TCP protocol. In this case, ezTCP could be operated as a Modbus/TCP Master or Slave.

- Notify Input Port Change

  While ezTCP is operating as a Modbus/TCP slave, it sends master response packets right after status of input ports have changed regardless of master's query.

- Master/Slave

  Choose one of the types in Modbus/TCP communication. A master sends queries to a slave and the slave replies to the query.

- Unit ID

  In the slave mode, this item means the device ID. In the master mode, however, the parameter means ID of the remote device and ezTCP.

- Input Port Base Address

  This represents the first address of digital input ports. In case of CIE-H10, there are 8 input ports. Therefore, the difference with [Output Port Base Address] has to be 8 at least. Modbus/TCP regards this value as a reference number of first digital input port (Di0) and next 7 numbers as addresses of each input port (Di1~7). This is the reason of why the value should be 8 at least.

- Output Port Base Address

  This represents the first address of digital output ports. In case of CIE-H10, there are 8 output ports. Therefore, the difference with [Input Port Base Address] has to be 8 at least.

- Poll Interval

  This item means the period of sending queries from the master. The unit is millisecond.

- Control Method of (FCXX)

  The output ports of slave are controlled both individually(bit unit) and simultaneously(word unit) in ezTCP master.

- Control Method of (AND/OR)

  Control method for the output ports of the master.

- Passive Connection

  ezTCP listens to the Modbus/TCP connection request.

- Active Connection

  ezTCP try to make Modbus/TCP connection.

- Multiple Connection

  In slave mode, you can accept multiple TCP connection requests using this option.

- Peer Address

  In the [Active Connection] mode, IP address or host name of counterpart should be set here.

- Peer Port

  In case of [Passive Connection], this is the local port number where the connection would be established. In [Active Connection], however, ezTCP tries to make Modbus/TCP connection through this port.

4.5.2 I/O Port Option Tab

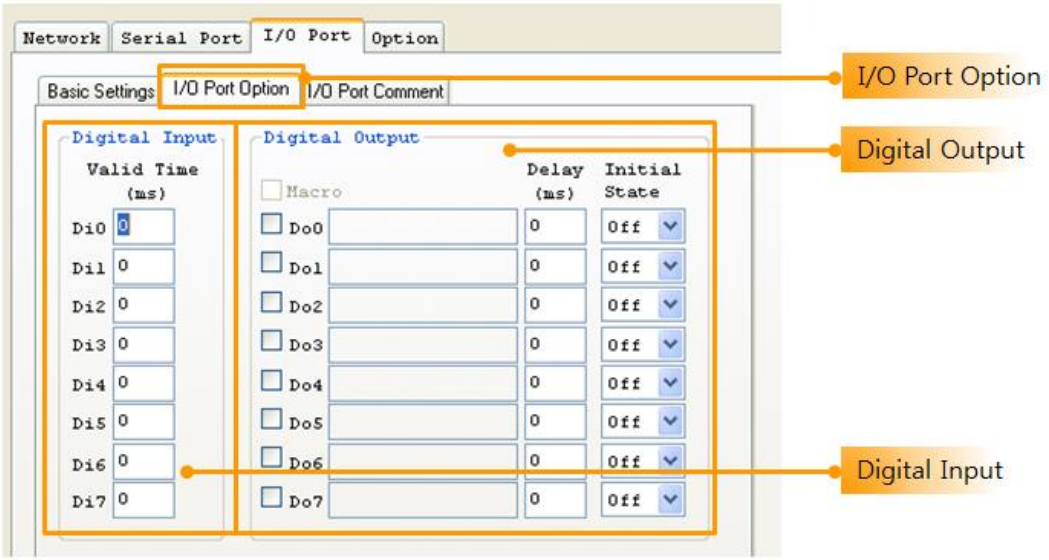

Figure 4-6 I/O Port Option tab

- Digital Input

  This is a part for setting [Valid Time]. I/O products recognize the input as a signal which is continued over the valid time. If the signal didn't maintain for the time, ezTCP will ignore it. The unit of [Valid Time] is one millisecond. However, the resolution is 10ms and flooring the rest of values.

- Digital Output

  This is a part for setting output port options like [Macro], [Delay] and [Initial State].

- Macro

  [Macro] is an option for automatic control of the output ports by using some numerical expressions. ezTCP supports some simple expressions of Boolean Algebra. While using this option, users can't control the output ports through HTTP or Modbus/TCP.

- Delay

  I/O models apply the signal to its output ports after the [Delay time]. The unit is 1 millisecond. However, the resolution is 10ms and flooring the rest of values. If the [Delay] is set to zero, ezTCP apply the signal immediately.

- Initial State

  This means that the initial state of each output port. If an output port is set to 'on', the port will be turn on right after the booting has been completed.

4.5.3 I/O Port Comments Tab

You can easily identify each product by using this comment option.

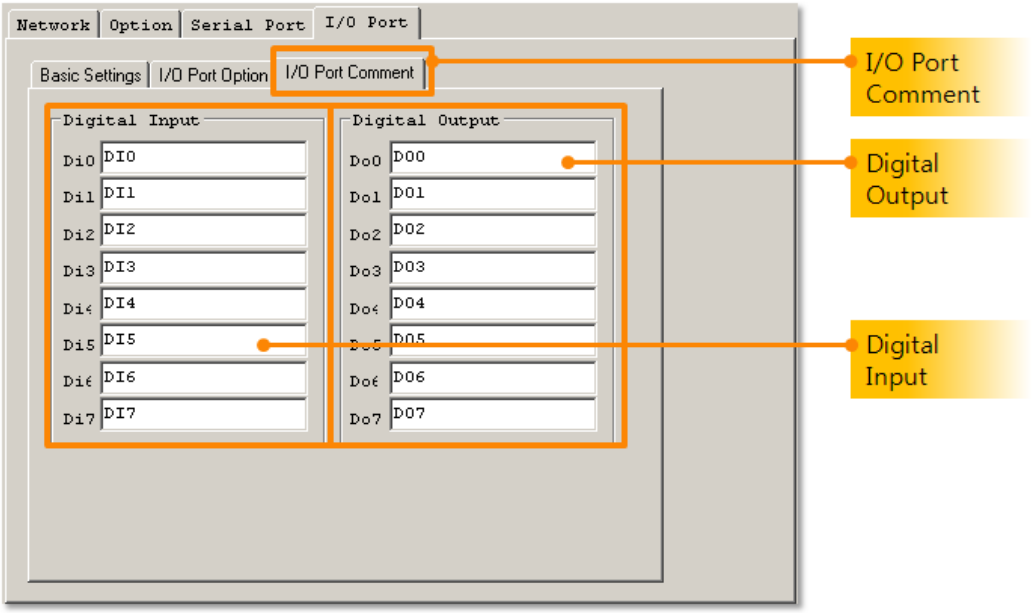

Figure 4-7 I/O port comment tab

- Digital Input

  Give comments for identifying the output ports

- Digital Output

  Give comments for identifying the input ports

5 Function Buttons

5.1 Basic Buttons

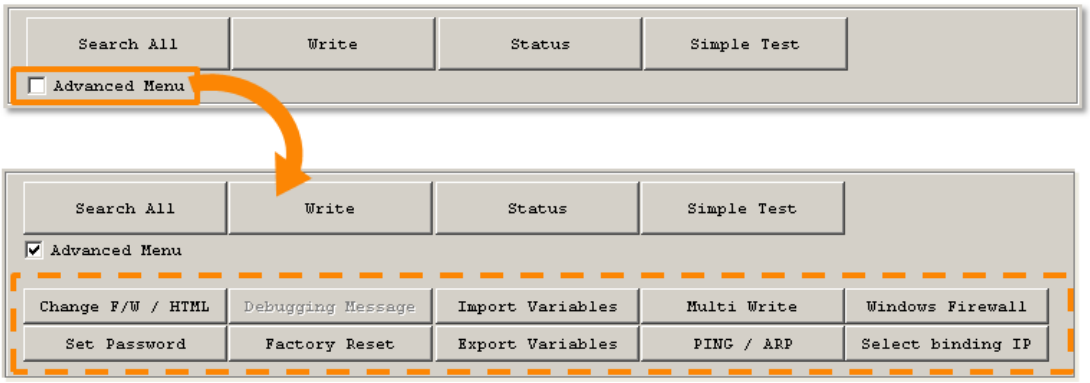

Figure 5-1 function buttons

5.1.1 Search All

ezManager searches all the products on the local network. The result is displayed on the [Search Results] box. Each value represents each MAC address of ezTCP. And parameters of the selected product are displayed in the right panel of the ezManager window.

5.1.2 Write

ezManager Saves the modified parameters to the ezTCP by pressing the [Write] button. The ezTCP resets automatically if the [Write] button is pressed.

5.1.3 Status

You can show the current status of your ezTCP by pressing this button. When users press this button, a new window is appeared and some information will be shown. The information includes system uptime, IP address, the amount of receiving and transmitting data from/to the serial ports.) This window appears when you double click the MAC address on the [Result Box]

5.1.4 Simple Test

You can simply test ezTCP in terms of both serial and network ports with this program. Please refer to the chapter 6 for the program.

5.2 Advanced Menu Buttons

The panel with these buttons appears with checking the [Advanced Menu] option.

5.2.1 Change F/W / HTML

This is for changing firmware file or HTML files. Refer to the chapter 8.

5.2.2 Set Password

This button is for setting or modifying the password of ezTCP. If the product has a password, you have to input the password when you press the [Write] button. The password used for restriction of configuring environmental parameters by unauthorized person. Once the password is configured, it will be necessary to remember for logging on telnet, SSH and HTTP.

5.2.3 Debugging Message

This button is used to see debugging messages. When the [Debugging Message] option is activating on the [Option] tap, ezTCP sends debugging messages with a port which is UDP 50006 and those can be captured after pressing this button. Since this operation may cause a lot of network traffic, you had batter to inactivate the [Debugging Message] option.

5.2.4 Factory Reset

All the parameters will be initialized of the products except for the password.

5.2.5 Import from file

Load environmental parameters from a file stored by [Export to file] on the present window.

5.2.6 Export to file

Store environmental parameters on the present window as a file

5.2.7 Multi Write

Set the present environmental parameters to multiple products. The products should be the same model.

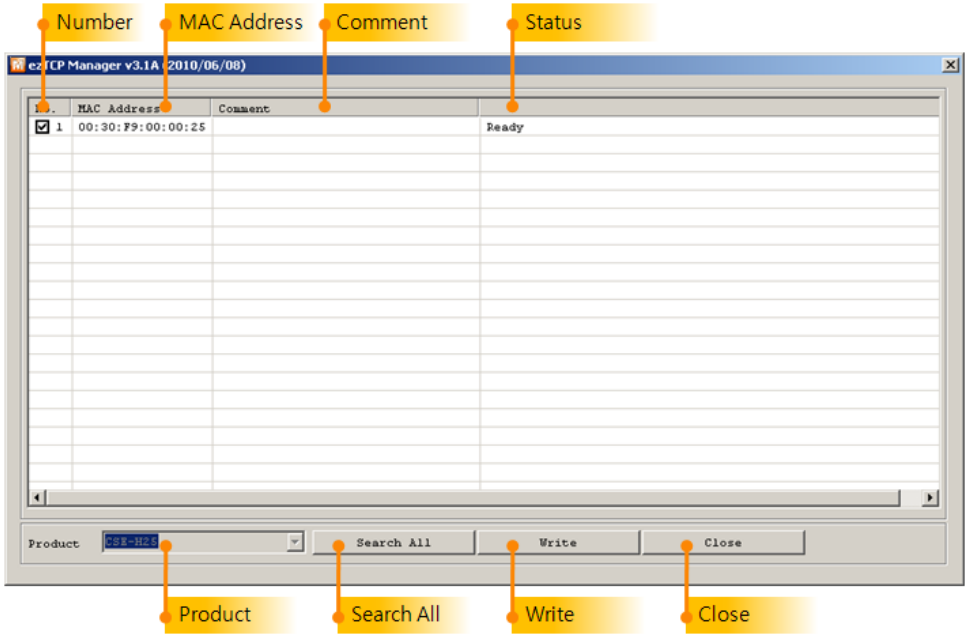

Figure 5-2 multi write window

- No. / MAC Address / Comment

  These items present the information of searched products.

- Status

Table 5-1 status on the multi write window

Message	Description
Ready	
Writing the environment variables has been successfully completed.	Succeed
No response from the ezTCP(s). Please check the LAN cable and the setting of the firewall on your PC. This program only works for the products with the prefixes such as “CSE”, “CIE” or “CSW”.	Failed

- Product

  Model name is shown in this box. Only products which have the same model name type are searched.

- Write

  Write the present settings to the searched products.

- Close

5.2.8 PING/ARP

This program is for PING test and management of ARP table.

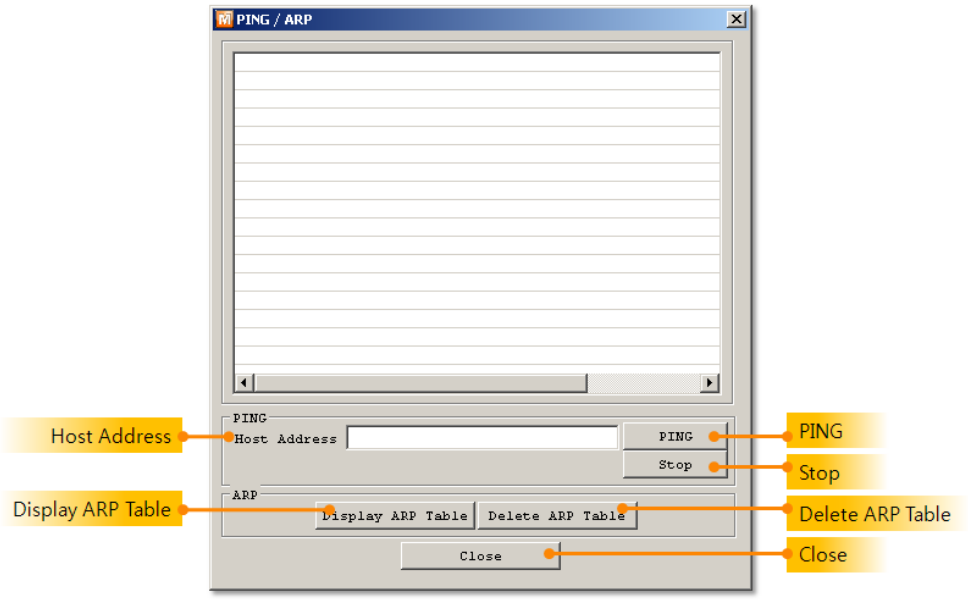

Figure 5-3 PING / ARP program

- Host Address

  Input a host address to send PING request.

- PING

  Send the PING request.

- Stop

  Stop sending the PING request

- Display ARP Table

  Display contents of ARP table in your PC

- Delete ARP Table

  Delete all the contents of ARP table in your PC

- Close

5.2.9 Windows Firewall

ezManager broadcasts UDP packets when searching ezTCP with [Search All] button on [MAC] tap. However, most of firewall blocks broadcast packets for some reasons. So, the ezManager doesn't work if any firewall is operating. This button lets you move to the firewall configuration window directly.

5.2.10 Select binding IP

By selecting a binding IP address, you can choose a Network Interface Card (NIC) of your PC for broadcasting the search packet from ezManager. This option will be helpful to users who have a PC with 2 Ethernet adapters or a laptop which equips both Ethernet adapter and Wi-Fi adapter.

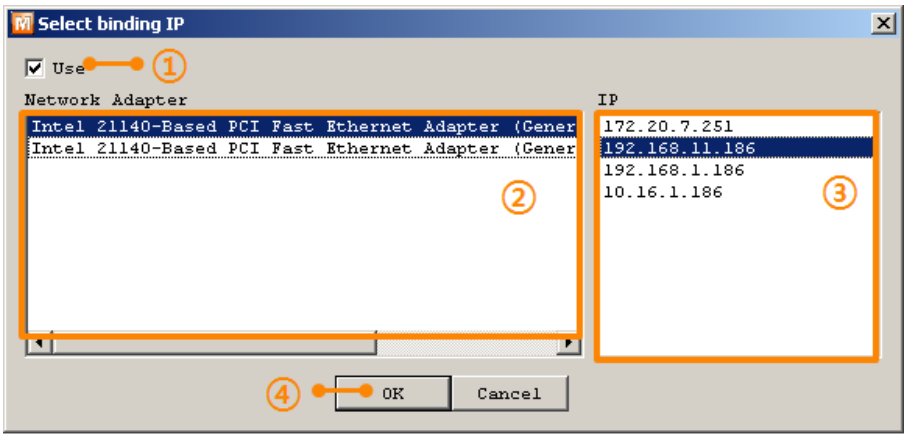

Figure 5-4 select binding IP

- Use:

  This option makes enable or disable the [Select binding IP] function.

- Network Adapter

  All the available NICs are listed in this area.

- IP

  All the assigned IP addresses of selected NIC are listed in this box.

- How to use

  ① Check the [Use] option.
  ② Choose a NIC to broadcast the search packets.
  ③ Select an IP address.
  ④ Press the [OK] button.

6 Simple Test Program

6.1 About the Program

This program can make you confirm that the operation of ezTCP about the data communication is fine. When you press the [Simple Test] button, the program will be created.

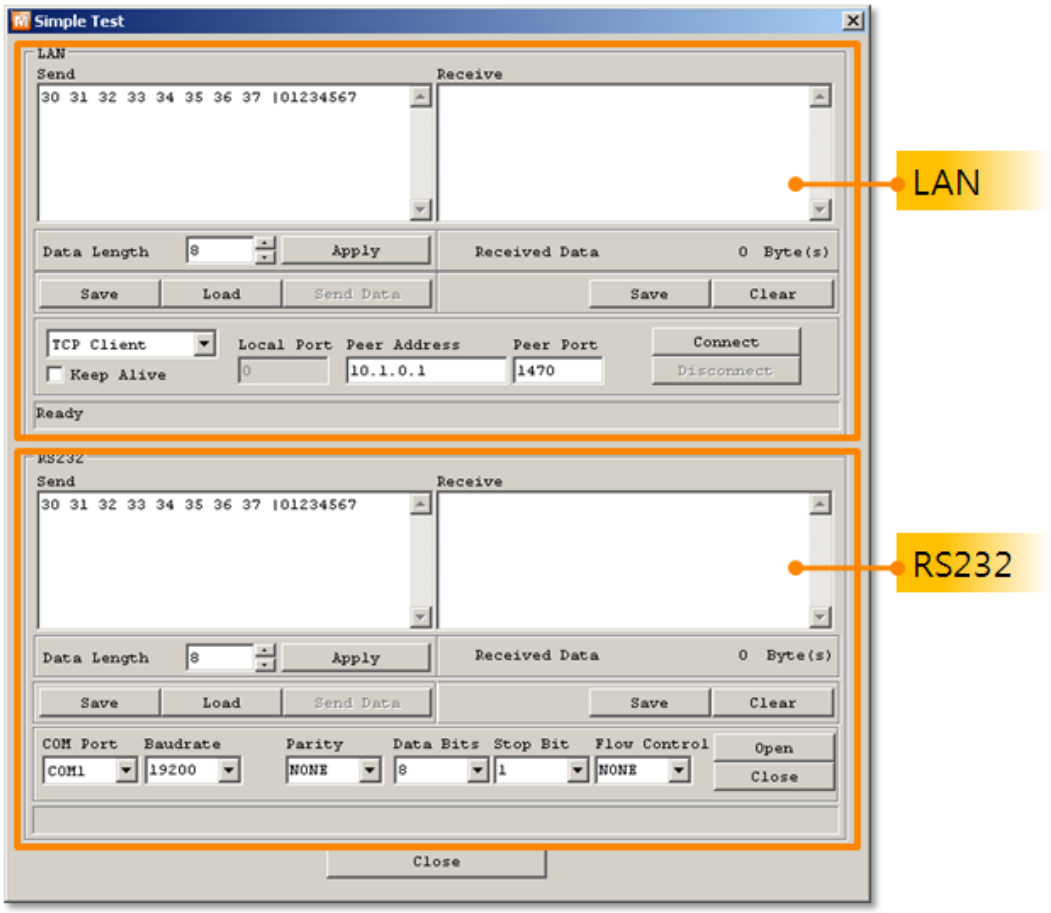

Figure 6-1 simple test program

This program has both LAN and serial interfaces.

6.2 LAN Part

This part is a socket communication program.

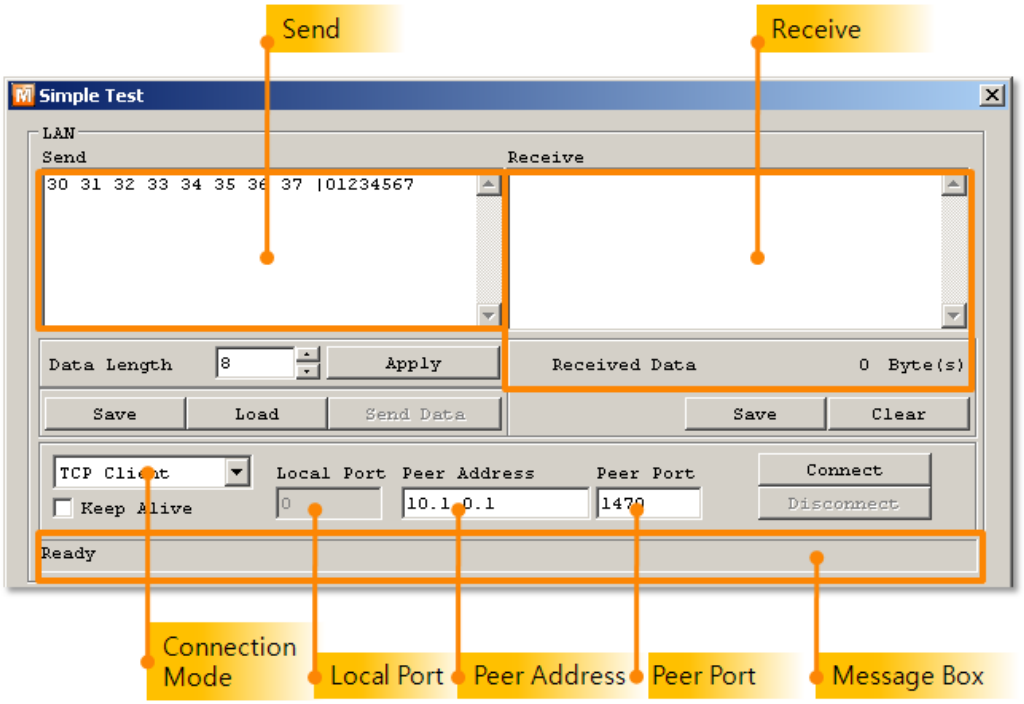

Figure 6-2 LAN part

6.2.1 Send Part

Data which is in this box will be sent to the network counterpart.

- Data Length

  Set the length of the data to send.

- Apply

  Apply the Data Length on the box.

- Save

  Store the message on the box as a file.

- Load

  Load a file on the box.

- Send

  Send data on the box to remote host.

6.2.2 Receive Part

Received TCP/IP data are displayed in this box.

- Save

  Store the message on the box as a file.

- Clear

  Clear the box.

6.2.3 TCP/IP Setting Part

- Connection Mode

  Set the communication mode. A mode could be set among three modes: TCP client, TCP server or UDP.

- Keep Alive

  Use Keep-Alive packet for detection of TCP disconnection.

- Local Port

  Set a local port number for receiving UDP data in UDP mode or listing to TCP connection requests in TCP server.

- Peer Address

  Configure a destination IP address or hostname.

- Peer Port

  Configure a destination port number.

- Connect

- Send TCP connection requests using the peer address and port. In UDP mode, the program gets ready to communicate.

- Listen

  Listen to TCP connection requests with the Local Port.

- Disconnect

  Disconnect established TCP connection. In UDP mode, the program gets back to the initial state.

- Message Box

  Output messages about the information of TCP/IP connection.

6.3 RS232 Part

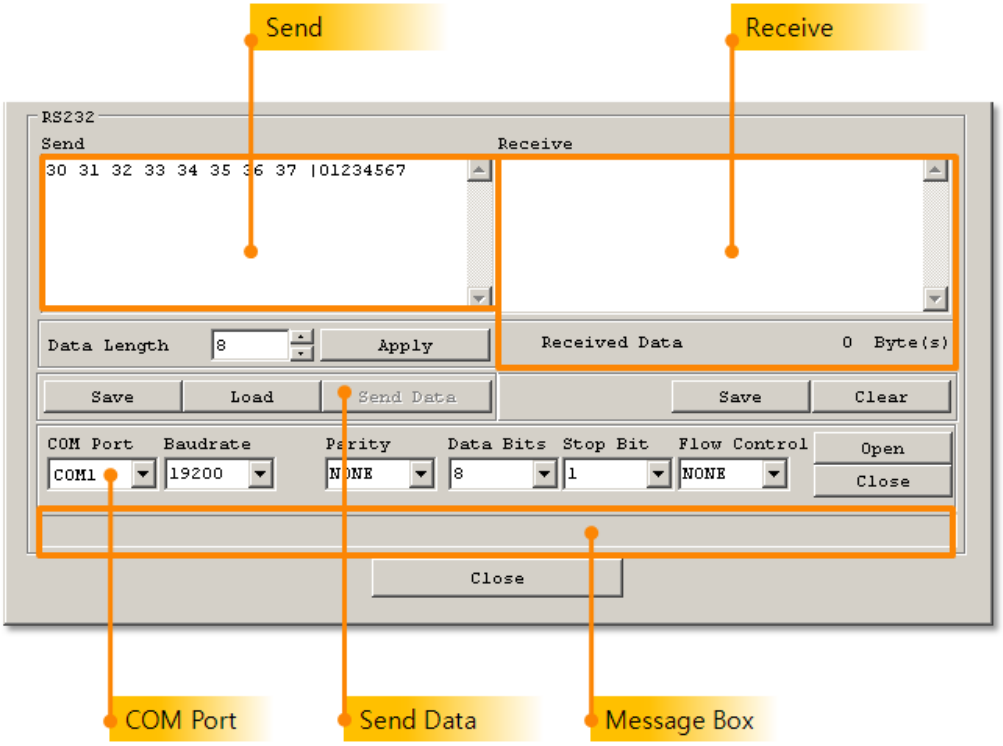

Figure 6-3 RS232 part

6.3.1 Send Part

Data which is in this box will be sent to the serial port.

- Data Length

  Set the length of the data to send.

- Apply

  Apply the Data Length on the box.

- Save

  Store the message on the box as a file.

- Load

  Load a file on the box.

- Send

  Send data on the box to the serial port.

6.3.2 Receive Part

Received serial data are displayed in this box.

- Save

  Store the message on the box as a file.

- Clear

  Clear the box.

6.3.3 RS232 Setting Part

- COM Port

  Select a COM port which is connected.

- Baud Rate / Parity / Data Bits / Stop Bit / Flow Control

  Set each parameter to the same with connected device.

- Open

  Open the selected COM port.

- Close

  Close the opened COM port.

- Message Box

  Output messages about the information of COM port operation.

6.4 Simple Test

- Connecting to the product via LAN

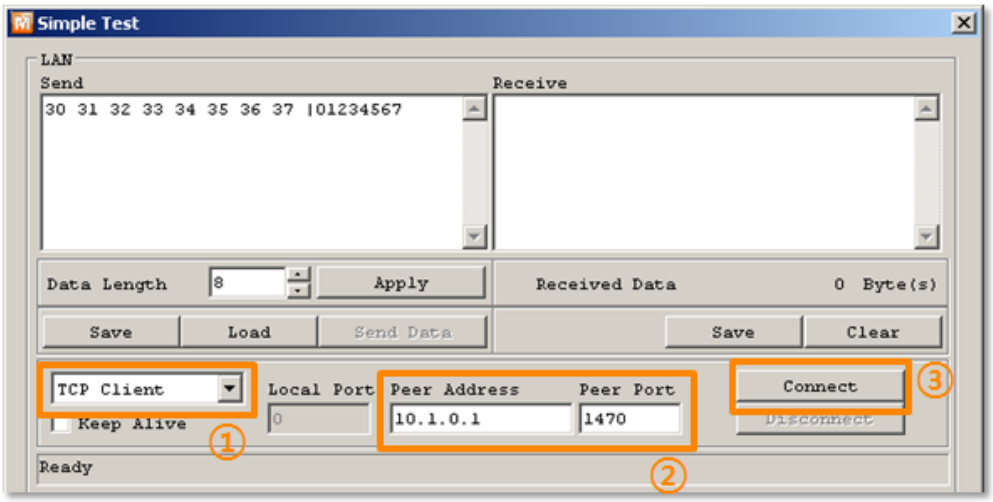

Figure 6-4 settings for TCP connection

① Select [TCP Client]

② Input correct IP address and port number of ezTCP

③ Click the [Connect] button. (In case of TCP Server, it will be [Listen] button)

- Opening RS232 Port

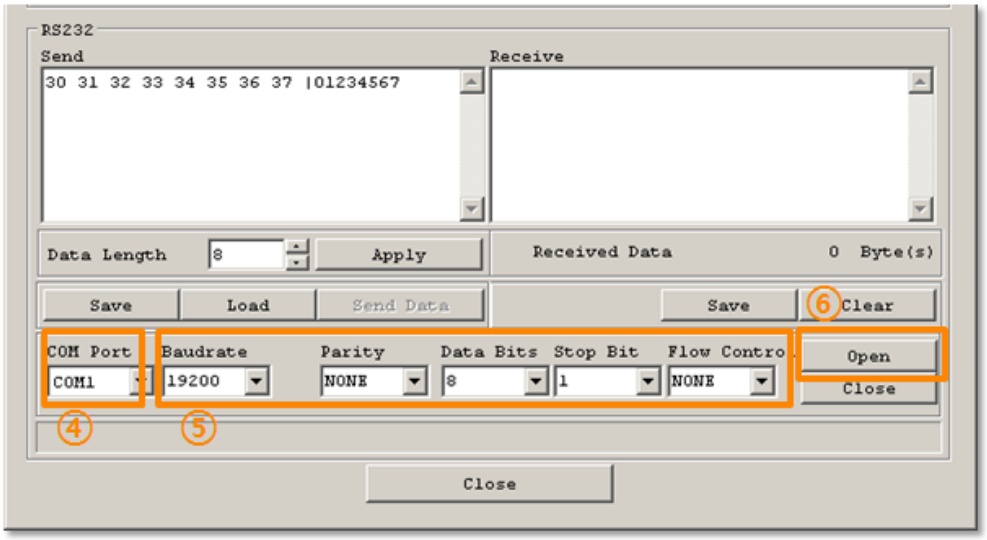

Figure 6-5 opening COM Port

④ Select COM port which the ezTCP is connected to

⑤ Make sure that all the parameters are the same with M53

⑥ Press the [Open] button

- Confirm the TCP Connection and COM port status

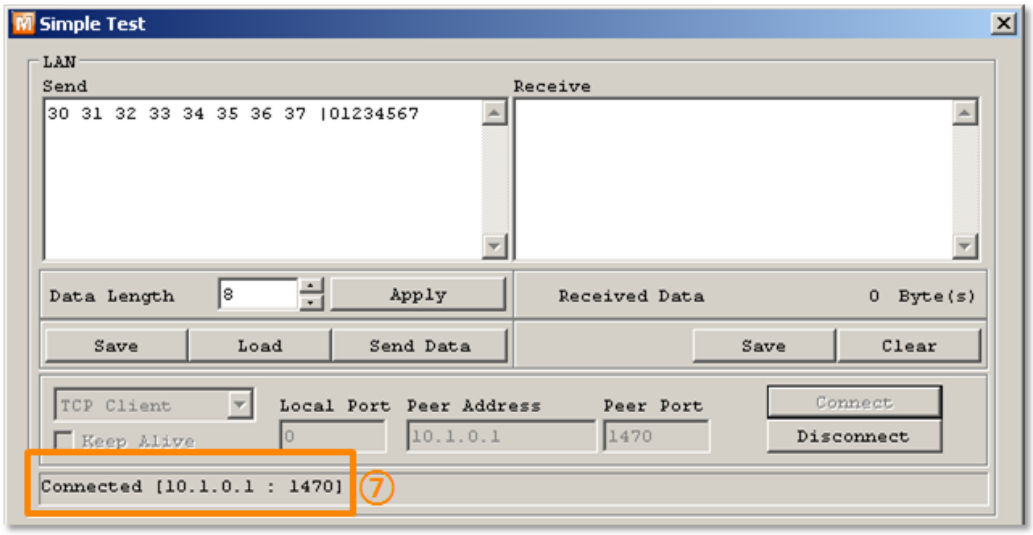

Figure 6-6 TCP Connected message

⑦ Check the message if the TCP connection is established

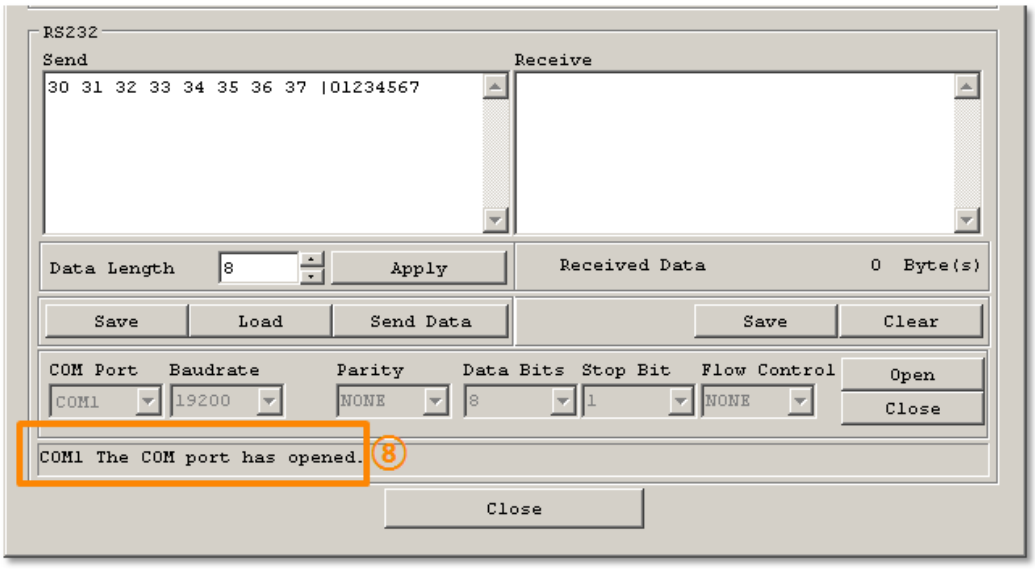

Figure 6-7 COM Port open message

⑧ Check the message if the COM port has been opened

- Data transmission test

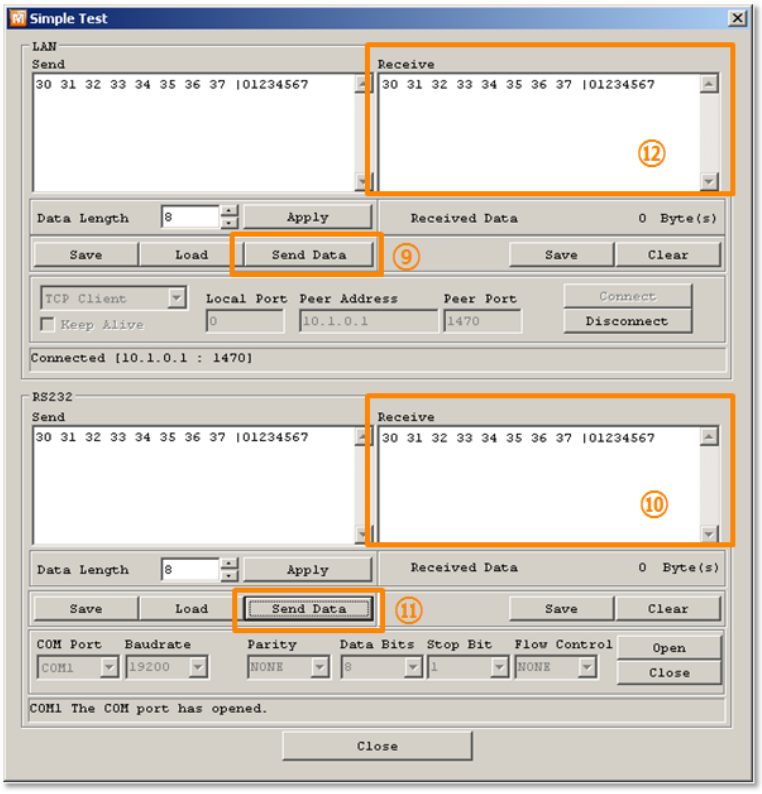

Figure 6-8 successful data transmission

⑨ Click the [Send data] on the LAN part

⑩ Check the data have been shown from the step ⑨

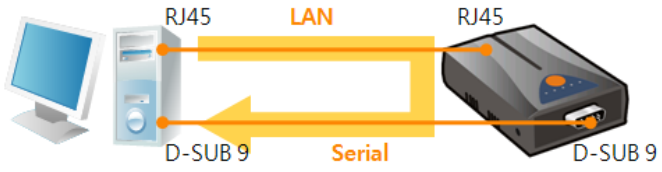

Figure 6-9 LAN → RS232

⑪ Press the [Send data] on the RS232 part

⑫ Check the data have been received from the step ⑪

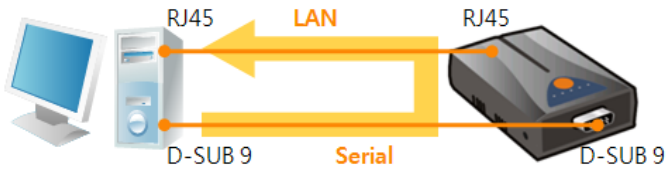

Figure 6-10 RS232 → LAN

7 Modbus/TCP Test Program

7.1 About the Program

When selecting I/O controller models with ezManager, a program for testing Modbus/TCP is created by the right side. You can test Modbus/TCP functions and operation like controlling output ports with this program. This is a Modbus/TCP master program.

7.1.1 Components

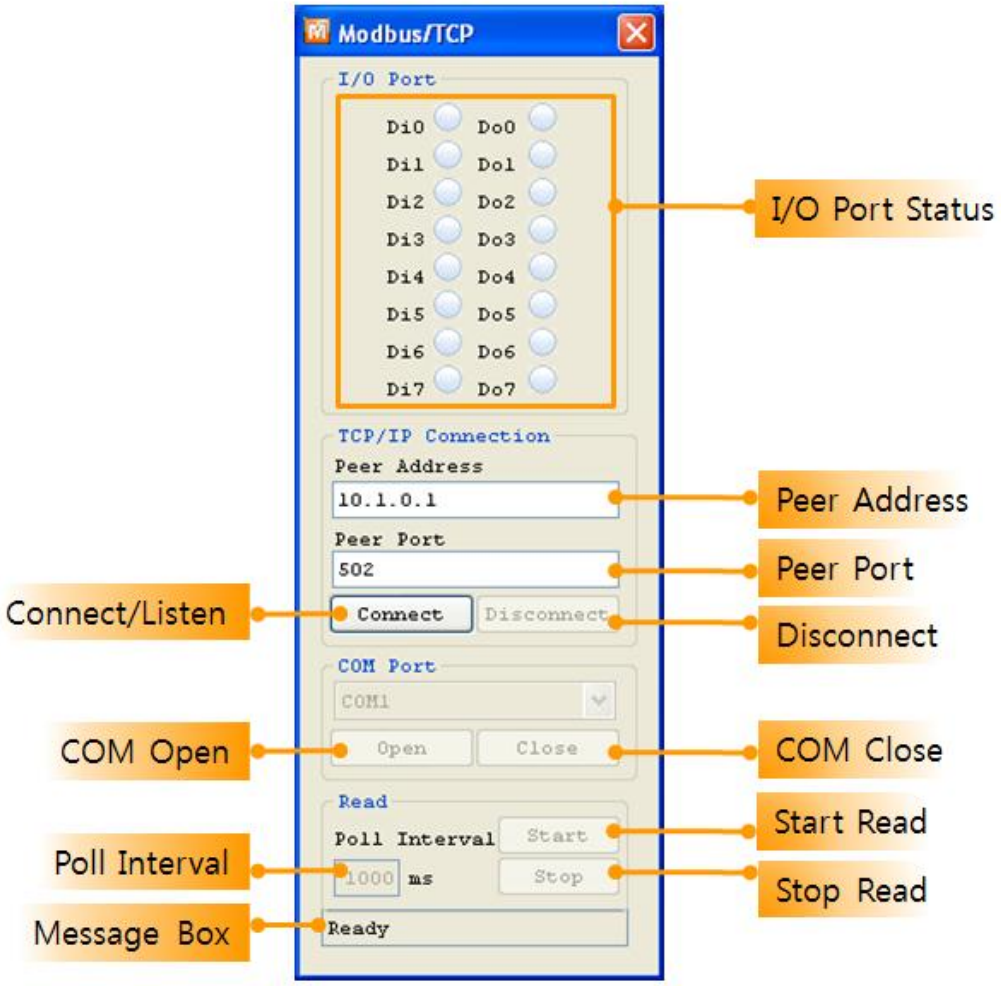

Figure 7-1 Modbus/TCP test program

- I/O Ports Status

  Each state of input and output ports is shown. The image is changed as green color when the port is ON.

- Connect / Listen

  While the product is operating in passive connection mode, [Connect] button is shown and it is used for sending TCP connection requests. If the product is operating in active connection mode, [Listen] button will be shown and it is used for waiting TCP connection requests.

☞ ***The program's connection mode (Active or Passive) is automatically set according to the product's mode.***

- Disconnect

  Disconnect established TCP connection.

- COM Port

  When the product is set to [Serialized Modbus/TCP] mode, this part is activated. You should select the connected COM port.

- Open / Close

  Open / Close the COM port.

- Poll Interval

  In the master mode, set the time period as milliseconds unit to send query.

- Read Start / Stop

  Start / Stop sending query from the program.

7.1.2 Test Operation

This is for checking the operation of Input and output ports via Modbus/TCP.

- Configuration of the product

① Select the MAC address after searching the product

② Check if the Modbus/TCP test program is created

③ Move to [I/O Port] tab

④ Select [Basic Settings]

⑤ Set the parameters like the below figure

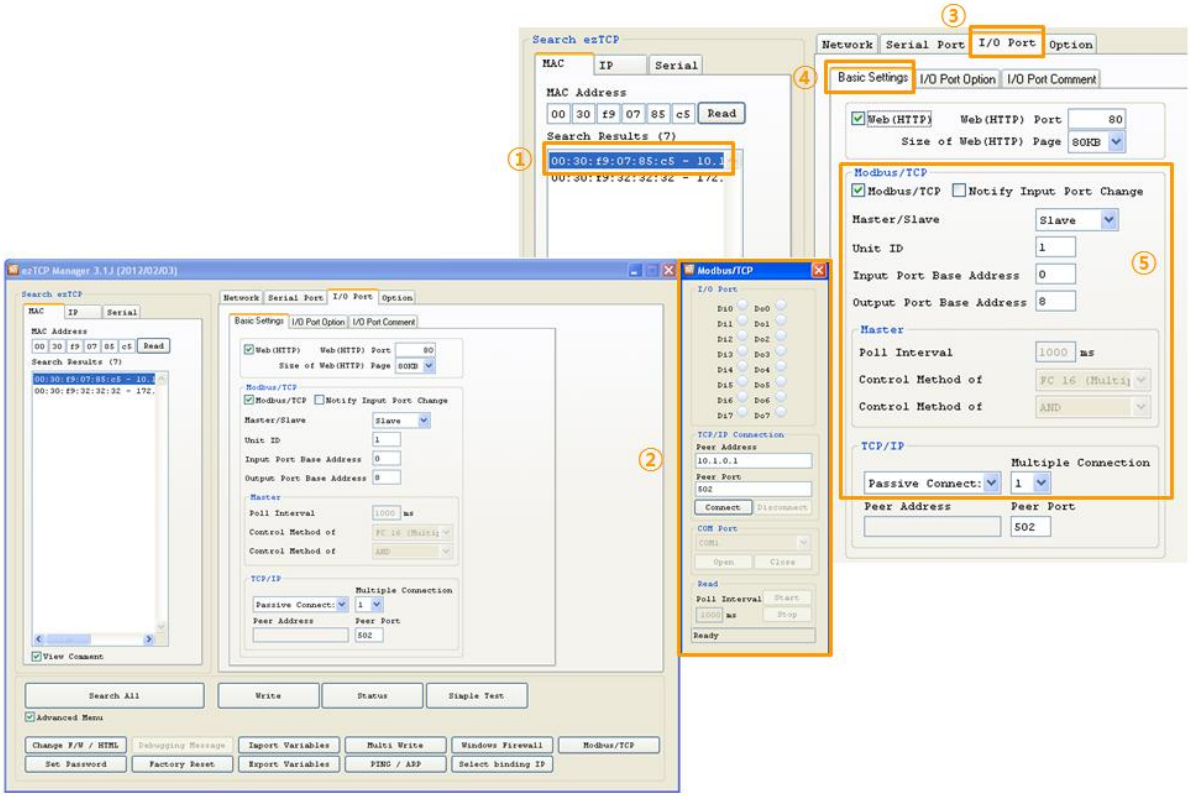

Figure 7-2 test operation for Modbus/TCP

- Connection and Controlling

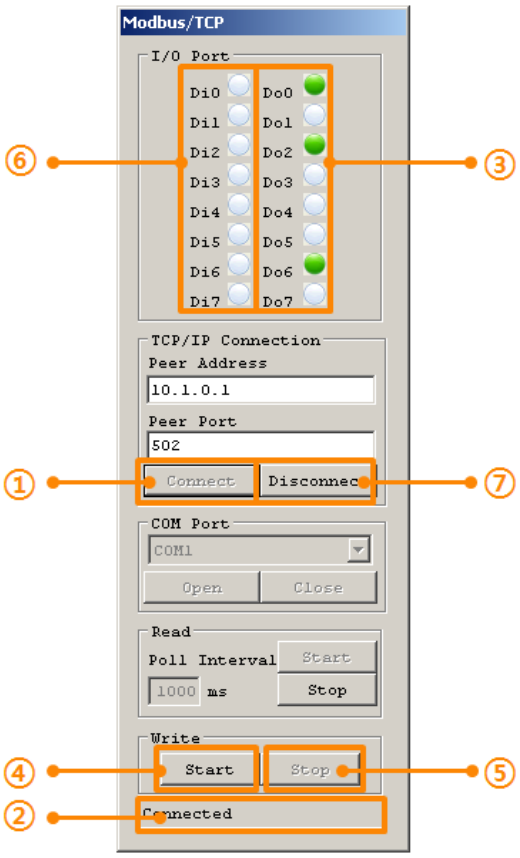

Figure 7-3 Modbus/TCP test program

① Press the [Connect] button

② Check the message output is fine

③ Click the each output port for test

④ Press the [Start] button for automatic output test

⑤ Press the [Stop] button to stop the test

⑥ Input signal to an input port and check if the LED is changed to green

⑦ Click the [Disconnect] button after test is finished.

8 Changing Firmware / HTML

8.1 Changing F/W

Firmware is a type of software that operates ezTCP at inside it. The firmware has been improving because it would be modified on occasional basis with fixing bugs or adding new functions by user's demands. Therefore, we recommend that users keep their product to have the latest released firmware. The information of new and old firmware of each product is on our website.

8.1.1 Changing F/W over the Ethernet

- Getting the latest firmware file

  Download the file on your PC and remember the route. The file is on our web site.

- Changing mode to ISP

  Change operation mode of ezTCP to ISP to download the firmware file.

- Preparation for transmission

  Press the [Change F/W / HTML] button. The program lets you transmit the file to ezTCP.

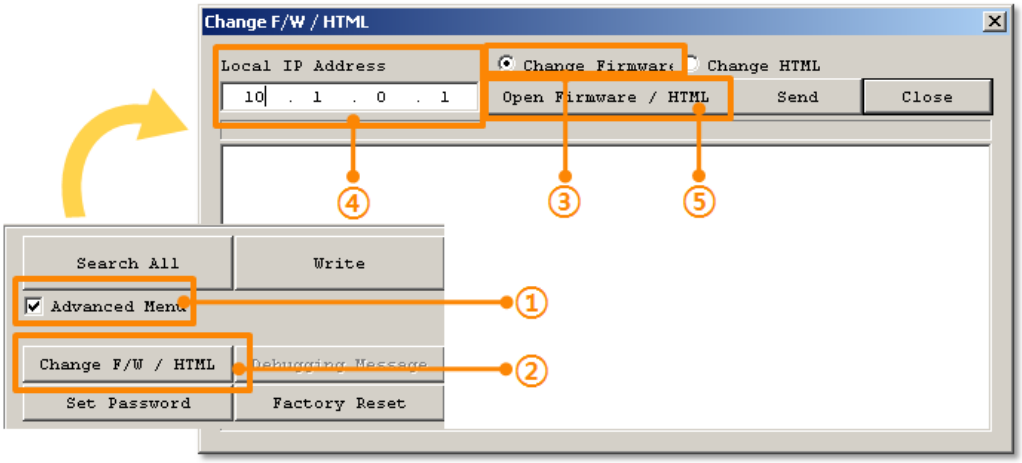

Figure 8-1 preparation for transmission

① Check the [Advanced Menu] option.
② Press the [Change F/W / HTML] button.
③ Select the [Change Firmware] option.
④ Input the IP address of the product.
⑤ Click the [Open Firmware / HTML] button and select a firmware file.

- Transmission

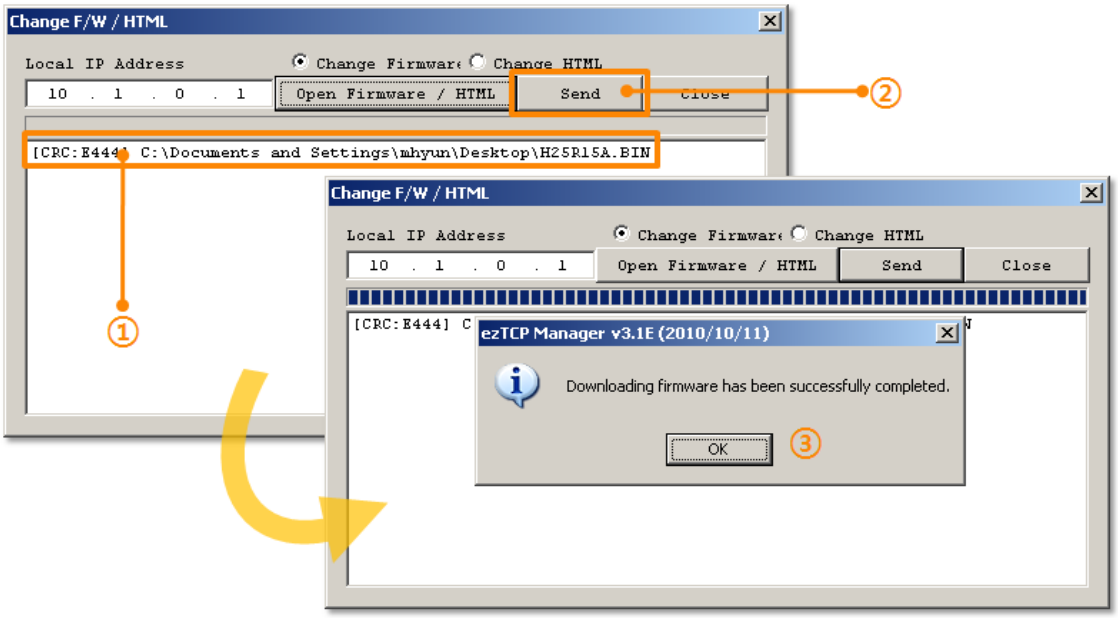

Figure 8-2 transmission

① Check the name of file and its route.

② Press the [Send] button.

③ Click [OK] button when downloading is completed.

8.1.2 Changing F/W over the Serial

In case of the products which are wireless LAN type, download f/w is implemented with its serial (RS232) port.

- Getting the latest firmware file

  Download the file on your PC and remember the route. The file is on our web site.

- Opening a COM port

  Connect the product and your PC with a RS232 crossed cable and open the COM port with [Serial] tab of ezManager.

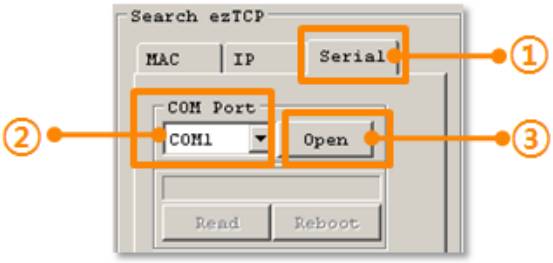

Figure 8-3 opening a COM port

① Move to the [Serial] tab

② Choose the connected COM port

③ Press the [Open] button

- Preparation for transmission

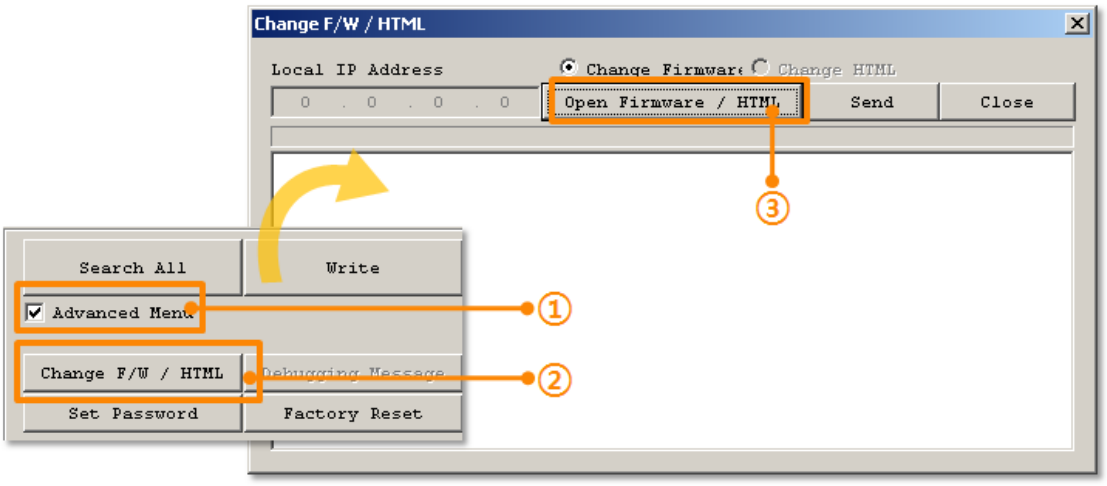

Figure 8-4 preparation for transmission

① Check the [Advanced Menu] option.

② Press the [Change F/W / HTML] button.

⑤ Click the [Open Firmware / HTML] button and select a firmware file.

- Transmission

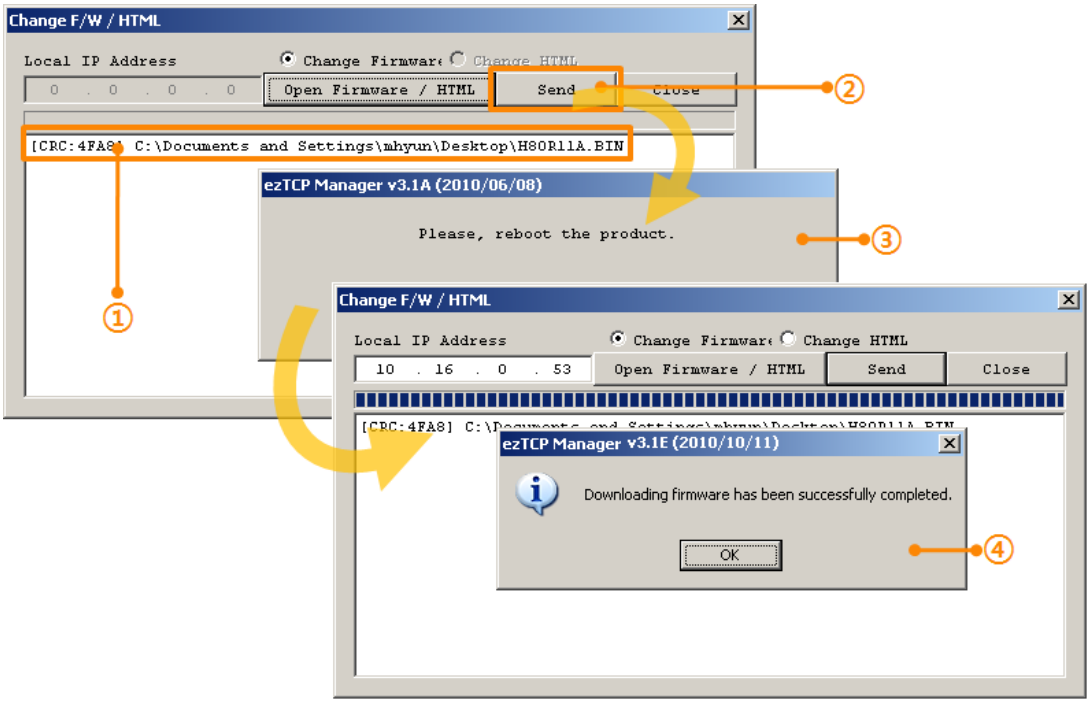

Figure 8-5 transmission

① Check the name of file and its route.

② Press the [Send] button

③ Reboot or supply power to the product again

④ Click the [OK] button when downloading is completed.

8.2 Changing HTML files

8.2.1 Uploading User's Homepage

I/O controllers like CIE-M10 and H10 basically support controlling option with HTTP. The after the 1.3A firmware, a function of using your homepage you made has been added. Your HTML files can be downloaded by ezManager. The procedure is the same with downloading firmware.

- Making a user's homepage

  Make your own HTML file using the designated function and script.

- Changing mode to ISP

  Change operation mode of ezTCP to ISP to download the firmware file.

- Preparation for transmission

  Press the [Change F/W / HTML] button. The program lets you transmit the file to ezTCP.

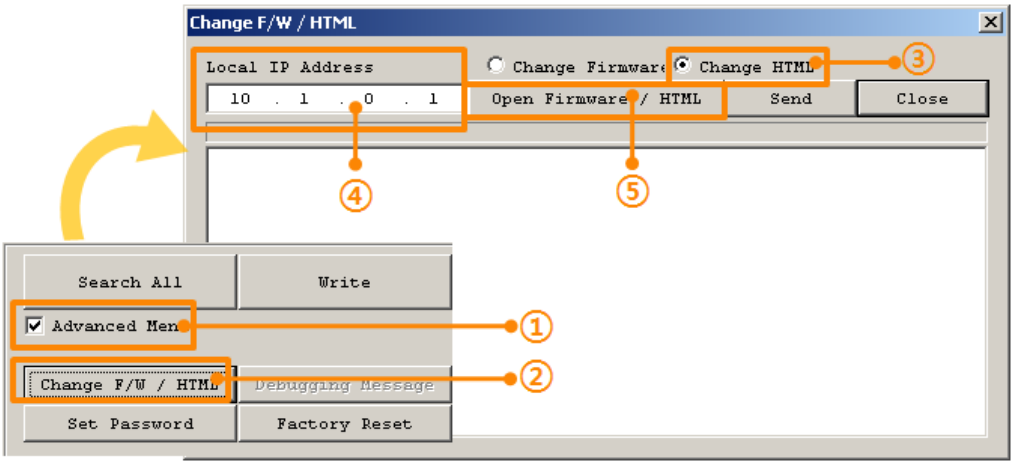

Figure 8-6 preparation for transmission

① Check the [Advanced Menu] option.

② Press the [Change F/W / HTML] button.

③ Select the [Change HTML] option.

④ Input the IP address of the product.

⑤ Click the [Open Firmware / HTML] button and select a HTML file including linked files.

- Transmission

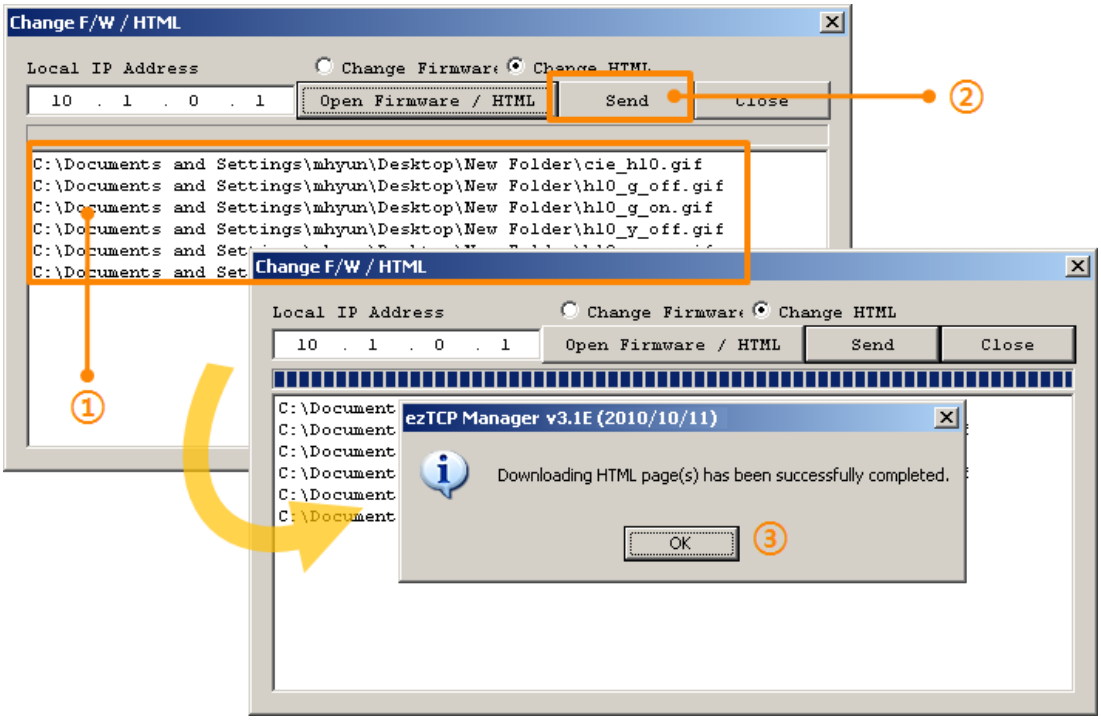

Figure 8-7 transmission

① Check the name of files and their route.

② Press the [Send] button.

③ Click [OK] button when downloading is completed.

☞ ***The basic HTML file is stored when the product is produced. We have been offering some sample files on our web site.***

9 Configuration Process

9.1 Configuration via LAN

- Checklists

  Make sure the connection between your PC and ezTCP. If those devices are the same network, [MAC Address search] button can be used. If they aren't, only [IP Address search] is allowed to use.

- Procedures

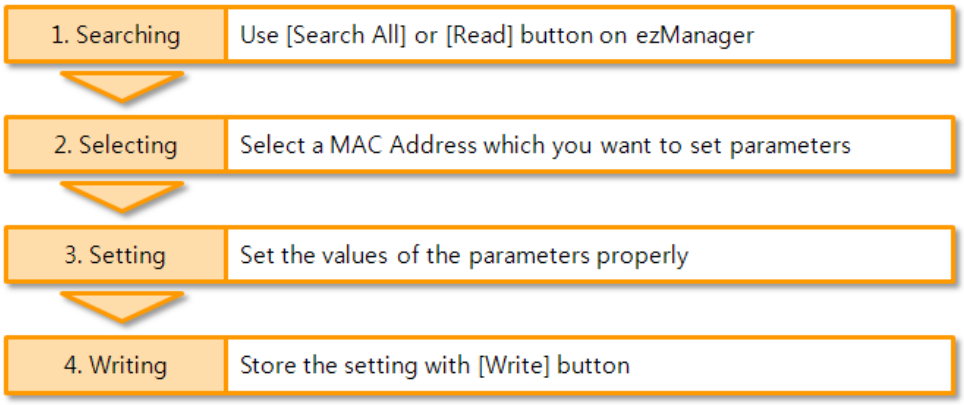

Figure 9-1 procedures for configuration via LAN

9.2 Configuration via Serial

- Checklists

  Make sure the connection between your PC and the product using RS232 crossed cable. To use this, ezTCP has to be operating in the [Serial Configuration] mode.

- Procedures

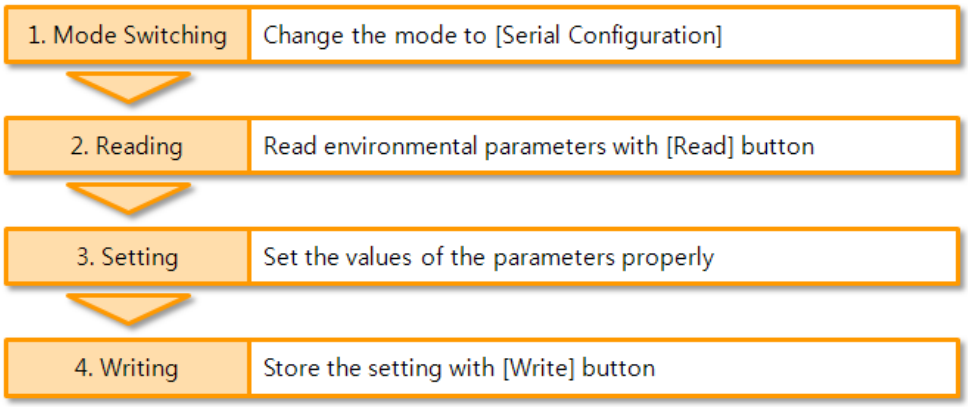

Figure 9-2 procedures for configuration via Serial

- Step 2, Reading

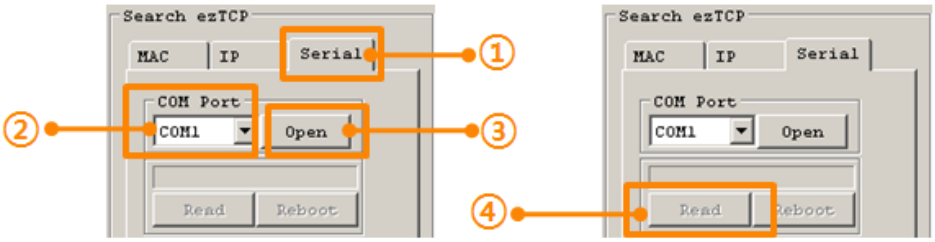

Figure 9-3 reading procedure via serial

① Choose the [Serial] tab
② Select the COM port
③ Open the COM port with the [Open] button
④ Load the setting with [Read] button

10 Other Functions

10.1 Status

Status of ezTCP can be monitored through the network. If you have problem with communication, use this information to find out the reason.

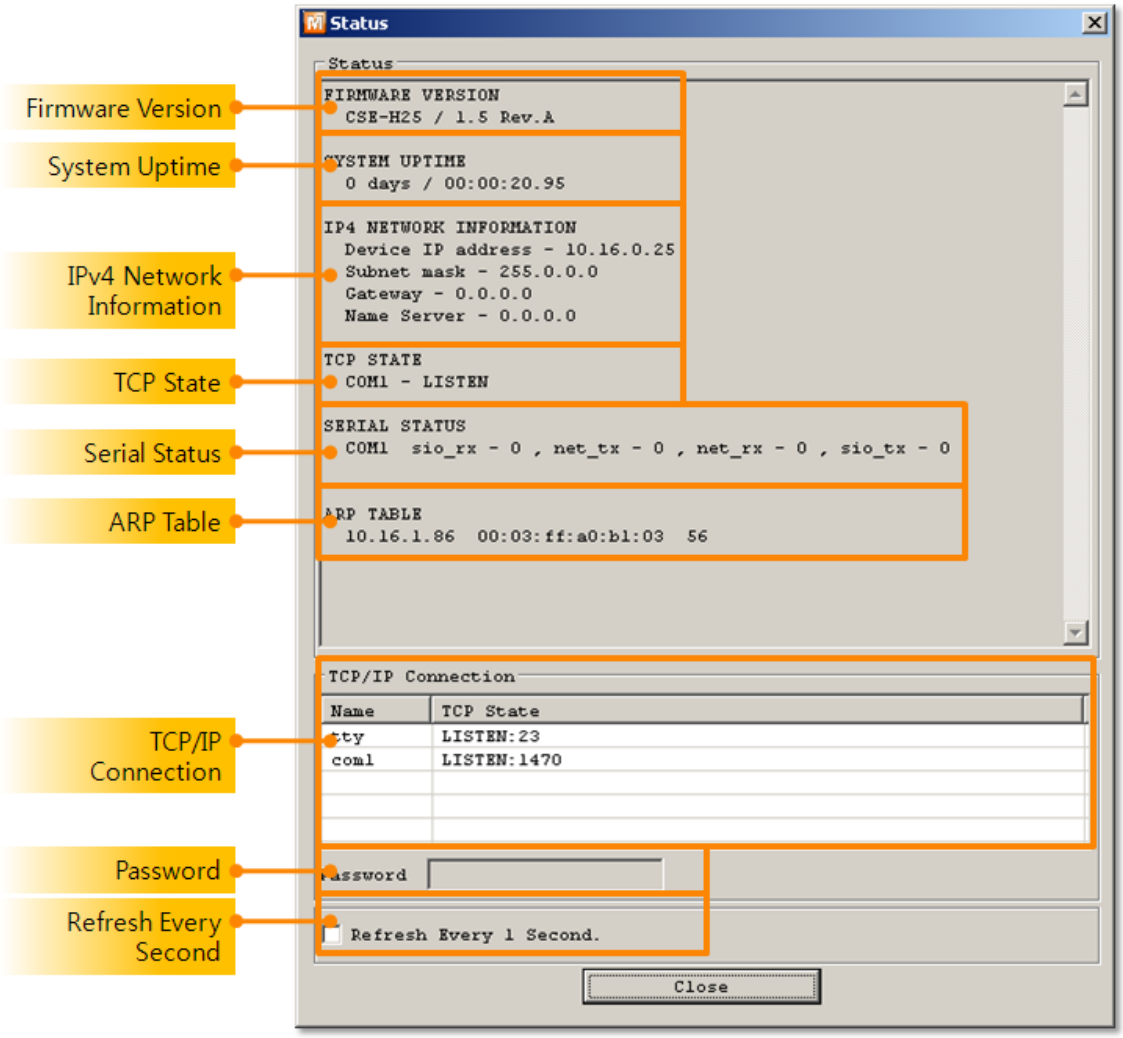

Figure 10-1 status window

- Firmware Version

  This part presents model name and version information of firmware. In some products, name of firmware file or CRC can be shown.

- System Uptime

  Amount of time is displayed since ezTCP boots up.

- IPv4 Network Information

All information about related items with IP Address is shown here. It works even if the IP address is assigned from DHCP or PPPoE.

- TCP State

TCP status of each port is shown this section.

Table 10-1 TCP STATE

Message	Description
LISTEN	listening TCP connection
CLOSE	TCP connection is closed
SYN_SENT	Send “SYN” segment to make TCP connection
ESTABLISHED	When TCP connection is established
N/A	In UDP mode

- Serial Status

Amount of data in every buffer is displayed. The unit is byte.

Table 10-2 SERIAL STATUS

Buffer	Description
sio_rx	The number of data which is received from the COM port
net_tx	The number of data which is sent to the remote host
net_rx	The number of data which is received from the remote host
sio_tx	The number of data which is sent to the COM port

- ARP Table

This part shows ARP table of the product. When TCP connection is established or UDP data communication is performed, the information of IP and MAC address is automatically stored in the ARP table. This information is held for 1 minute. When 50 seconds is passed, the product starts broadcasting the ARP packet again. If there is no response until the time is 0, the information is removed. If there is response, the time is updated 60 seconds again.

- TCP/IP Connection

In this section, the same information with TCP STATE is displayed with IP address and port number. A difference is that users can terminate TCP connection. When right click on a session, a small pop-up window is created.

- Password

This text box is activated when the product has a password. If users want to close TCP connection with right click of mouse on the session, this password has to be correctly filled.

- Refresh Every 1 Second.

  If this option is checked, ezManager send query in every second.

- Wi-Fi Status

Figure 10-2 Wi-Fi status

Although not appear on above figure, Wi-Fi status can be monitored, too. Device who has a closer number of RSSI is in good Wi-Fi channel condition.

Table 10-3 Wi-Fi status

Item	Description
Channel	Name of channel (frequency band) which is using
Link State	Maximum data rate of the link
RSSI	Received Signal Strength Indication

- I/O Ports Status

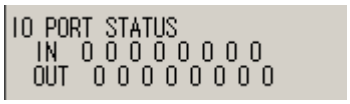

Figure 10-3 I/O ports status

Although not appear on above figure, digital I/O ports status can be monitored, either. From the left, port 0 ~ 7 are shown. Status 1 means the port is ON and 0 means OFF.

10.2 Debugging Message

10.2.1Debugging Message

When ezTCP does not working, you can capture debugging messages from the product for finding out the reason.

10.2.2Procedure

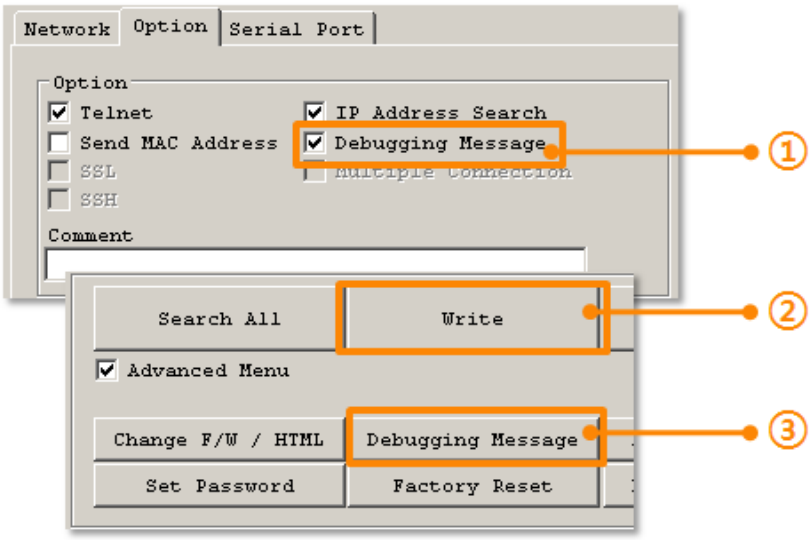

Figure 10-4 procedure

① Check the [Debugging Message] option on the [Option] tab.

② Click the [Write] button.

③ Check the [Advanced Menu] and press the [Debugging Message] button. Then, the debugging message window will appear.

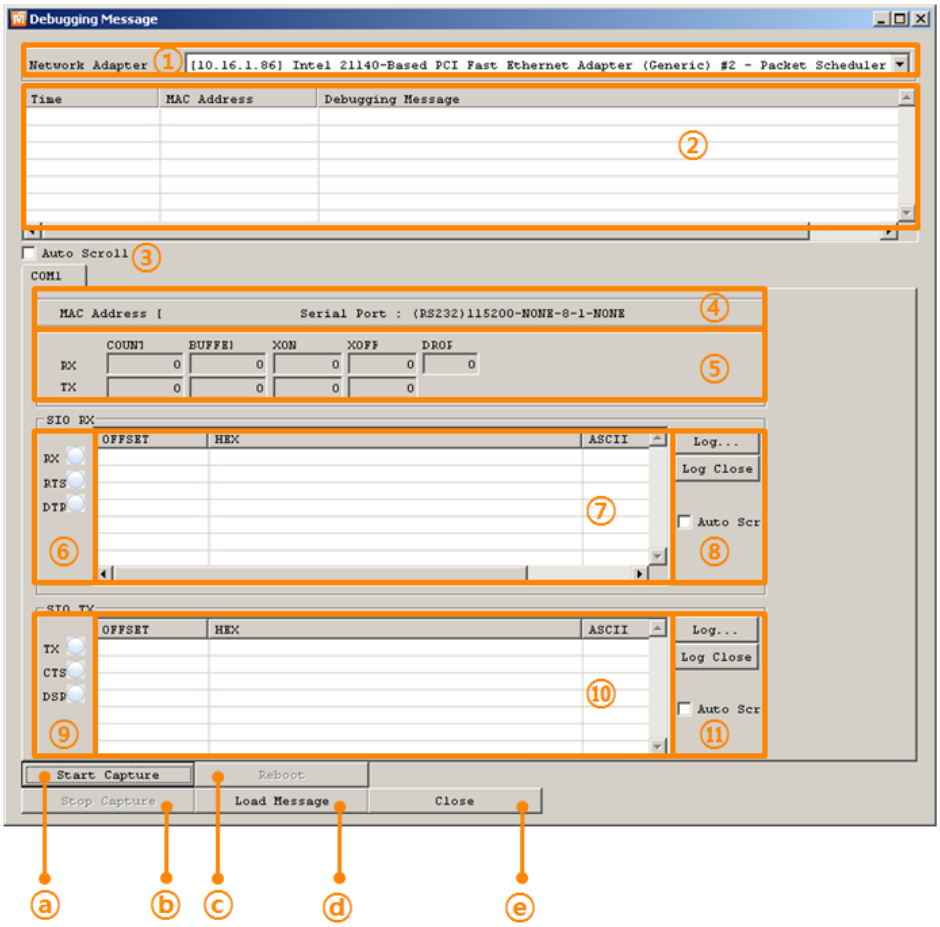

Figure 10-5 debugging message window

① Network Adapter

② Place for listing received debugging messages from ezTCP over the network

③ Auto update to display the latest captured file on the screen of ②

④ MAC Address and Serial port Information of a selected message

⑤ Amount of received or dropped data and XON/OFF signals

⑥ Serial port's receiving status with LED interface

⑦ Place for listing received data from the serial port

⑧ Buttons for saving, closing and clearing a log file including an auto scroll option

⑨ Serial port's transmitting status with LED interface

⑩ Place for listing sent data to the serial port

⑪ Buttons for saving, closing and clearing a log file including an auto scroll option

ⓐ To start capturing debugging messages from ezTCP

ⓑ To stop capturing debugging messages from ezTCP

ⓒ [Reboot] button is for software rebooting

ⓓ [Load Message] is for loading a debugging log file to display

ⓔ Closing debugging message window

☞ ***If you have problems with communication or connection, it can be helpful for us that you capture the debugging messages and send us to the file.***

☞ ***When you use [Debugging Message] function, it can cause network traffic because the messages are broadcasted to whole network. If you don't use it anymore, you should uncheck the function.***

11 Revision History

Date	Version	Comments	Author
2009.06.02	1.0	○ Initial Released	
2010.06.01	1.3	○ Style of document has been changed ○ Contents have been modified based on version 3.0G	
2010.06.18	1.4	○ Contents have been modified based on version 3.1A. ○ Chapter 11 Revision History has been updated. ○ Table 1-1 has been updated: CSE-H55 is added.	Roy LEE
2010.11.02	1.5	○ Contents have been modified based on version 3.1E. ○ [Select Binding IP] option has been added. ○ [Multiple Connection] menu for Modbus/TCP has been added.	Roy LEE
2012.03.22	1.6	○ Contents have been modified based on version 3.1J ○ Wireless security contents has been added. ○ I/O port has been updated.	Lisa Shin