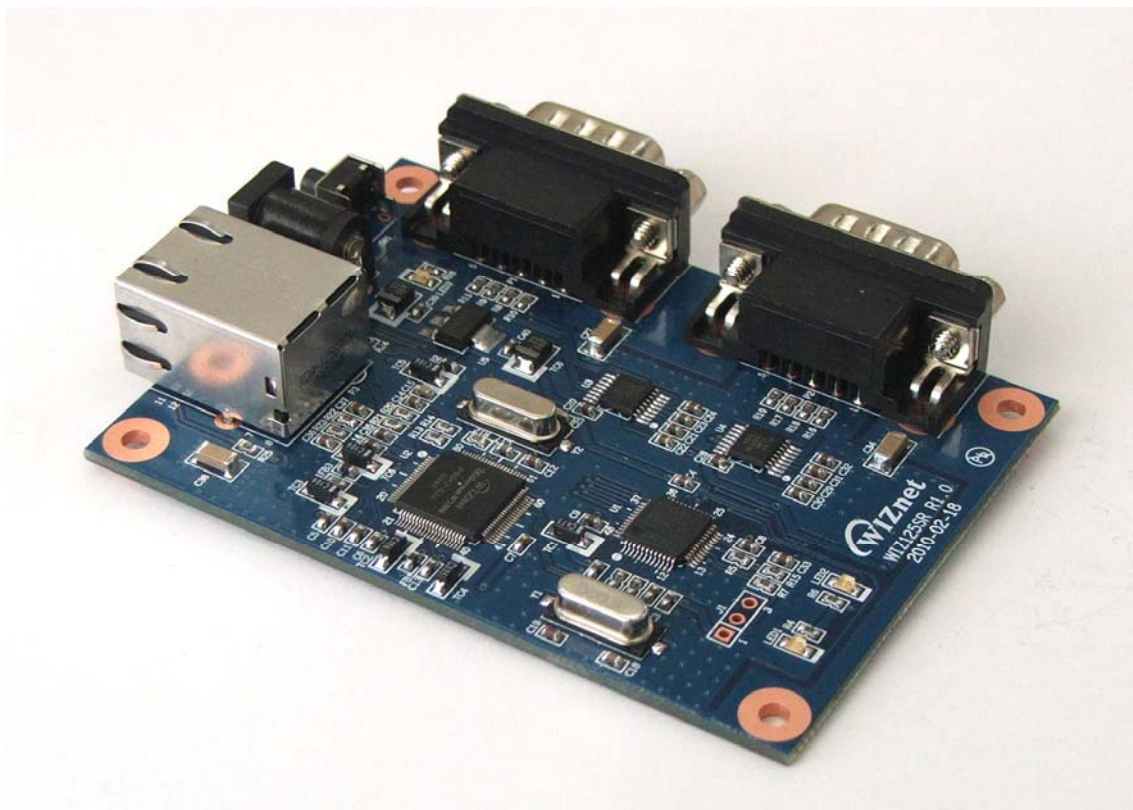


# WIZ125SR User Manual

( Version 1.0 )



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## Document Revision History

| Date       | Revision | Changes          |
|------------|----------|------------------|
| 2010-04-20 | V1.0     | Official Release |
|            |          |                  |
|            |          |                  |
|            |          |                  |

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If you have any questions about our products, please visit our website and submit your questions on the [Q&A Board](#). We will reply your questions as soon as possible



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# 1. Introduction

WIZ125SR is a 2 ports gateway module that converts RS-232 protocol into TCP/IP protocol. It enables remote gauging, remote management of the device through the network based on the Ethernet and the TCP/IP by connecting to existing equipments with RS-232 serial interface. In other words, WIZ125SR is a protocol converter that transmits the data sent by serial equipment as TCP/IP data type and converts back the TCP/IP data received through the network into serial data to transmit back to the equipment.

**WIZ125SR has been designed by using WIZ120SR module and WIZ120SR-EVB.  
Therefore all functions and operations are identical with WIZ120SR module.  
Refer to the 'WIZ120SR User Manual' for detail description.**

## 1.1 Key Features

- Direct connection to the serial device
  - Adding network function simply and quickly
  - Providing Firmware customization
- Support 2 Port Serial
- System Stability and Reliability by using W5100 Hardware Chip
- Supports PPPoE Connection
- Support "User Password" function for security
- Supports Serial Configuration – with Simple and Easy command
- Supports Password for the Security
- Configuration Tool Program
- 10/100 Ethernet Interface and max 230Kbps Serial Interface
- Support DNS function
- RoHS Compliant

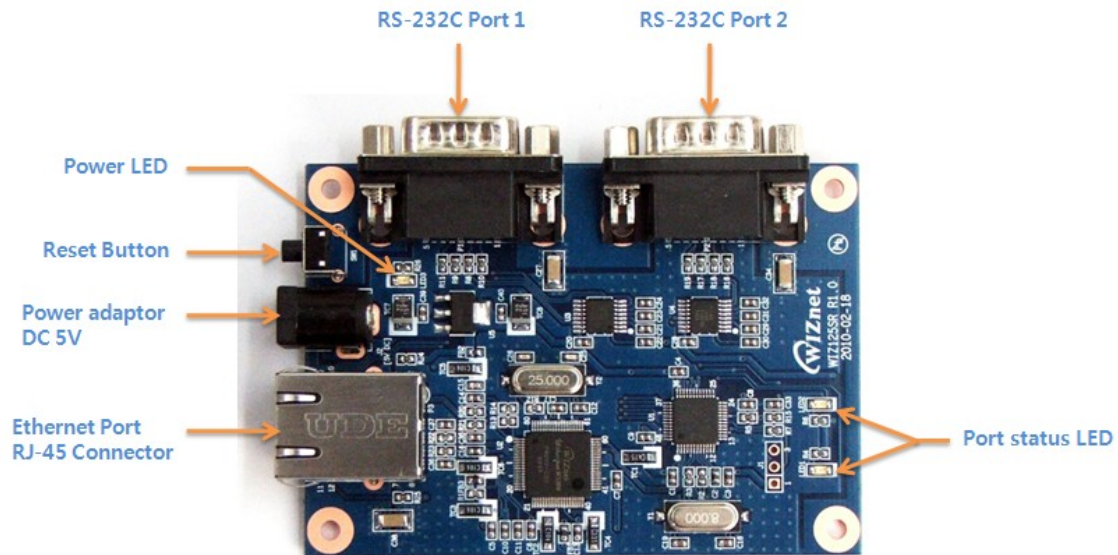
## 1.2 Product Specifications

| Category                  | Specification                                        |
|---------------------------|------------------------------------------------------|
| Protocol                  | TCP, UDP, IP, ARP, ICMP, IGMP, MAC, DHCP, PPPoE, DNS |
| Network Interface         | 10/100 Base-T Ethernet (Auto detection) / RJ-45      |
| Serial Port               | RS-232C DB-9 2port                                   |
| CPU                       | Cortex-M3 Core                                       |
| Serial line format        | 8-N-1, 8-O-1, 8-E-1, 7-O-1, 7-E-1                    |
| Serial flow control       | None, XON/XOFF, CTS/RTS                              |
| Serial signal             | TXD, RXD, RTS, CTS, GND                              |
| Software                  | Remote Download and Configuration                    |
| Serial Transmission Speed | 1200bps ~ 230Kbps                                    |
| Temperature               | 0 ~ 70°C (Operating), -40 ~ 85°C (Storage)           |
| Humidity                  | 10~90%                                               |
| Power                     | DC 5V, 220mA(MAX)                                    |
| Size                      | 88.5mm x 65.5mm x 18mm ( Include connector size )    |

**Table 1. WIZ125SR Specifications**



### 1.3 WIZ125SR Interface



**Figure 1. WIZ125SR Interface**

## 2. Serial Configuration

### 2.1 Serial Command Format

Serial Command is used to set WIZ125SR parameter. This function is using S/W trigger of WIZ125SR, if input specific letters(three characters), you can start configuration mode.

User can set any special character with the configuration tool, and this function support UART 0 only.

#### Command Frame format

| Descriptor    | STX | Command code | Parameter | ETX |
|---------------|-----|--------------|-----------|-----|
| Length(bytes) | 1   | 2            | Variable  | 1   |

**Table 2. Serial Configuration Frame format**

#### Reply Frame format

| Descriptor    | STX | Reply code | Parameter | ETX |
|---------------|-----|------------|-----------|-----|
| Length(bytes) | 1   | 1          | Variable  | 1   |

**Table 3. Serial Configuration Reply Frame format**

#### STX & ETX

| Setting | Comments        |
|---------|-----------------|
| STX     | '<' : Hex = 3Ch |
| ETX     | '>' : Hex = 3Eh |

**Table 4. Serial Configuration STX & ETX**

#### Reply Code

| Reply | Comments               |
|-------|------------------------|
| S     | Command was successful |

|   |                           |
|---|---------------------------|
| F | Command failed            |
| 0 | Invalid STX               |
| 1 | Invalid command           |
| 2 | Invalid parameter         |
| 3 | Invalid ETX               |
| E | Enter Serial Command Mode |

**Table 5. Serial Configuration Reply Code**

#### Command Code

|                      | Command | Parameter                                                                                                                             | Comments                                                                                                     |
|----------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Set common parameter | WI      | xxx.xxx.xxx.xxx (eg. 192.168.11.133)                                                                                                  | Set Local IP                                                                                                 |
|                      | WS      | xxx.xxx.xxx.xxx (eg. 255.255.255.0)                                                                                                   | Set Subnet mask                                                                                              |
|                      | WG      | xxx.xxx.xxx.xxx (eg. 192.168.11.1)                                                                                                    | Set Gateway                                                                                                  |
|                      | WD      | 0 : Static, 1 : DHCP, 2 : PPPoE                                                                                                       | Set the IP configuration method                                                                              |
|                      | WT      | 0 : Disable, 1 : Enable                                                                                                               | Set the serial command method                                                                                |
|                      | WE      | xxxxxx (eg. In hex format : 2B 2B 2B)                                                                                                 | Set the command mode character                                                                               |
|                      | WY      | PPPoE ID                                                                                                                              | Set PPPoE ID                                                                                                 |
|                      | WZ      | PPPoE Password                                                                                                                        | Set PPPoE Password                                                                                           |
|                      | WR      |                                                                                                                                       | Restart                                                                                                      |
| Set UART0 parameter  | WP      | 0~65535                                                                                                                               | Set Local IP's port number for UART0                                                                         |
|                      | WM      | 0 : TCP Client, 1 : TCP Mixed, 2 : TCP Server                                                                                         | Set the TCP operation mode for UART0                                                                         |
|                      | WK      | 0 : TCP, 1 : UDP                                                                                                                      | Set Protocol(TCP or UDP) for UART0                                                                           |
|                      | WB      | XXXX<br>eg. [Baudrate]1: 115200, 2: 57600,<br>3: 38400, 4: 19200, 5: 9600,<br>6: 4800, 7: 2400, 8: 1200<br>[data byte] 7 : 7bit, 8bit | Set the serial baud rate, data, parity and flow control for UART0.<br>4bytes:[Baud][data byte][parity][flow] |

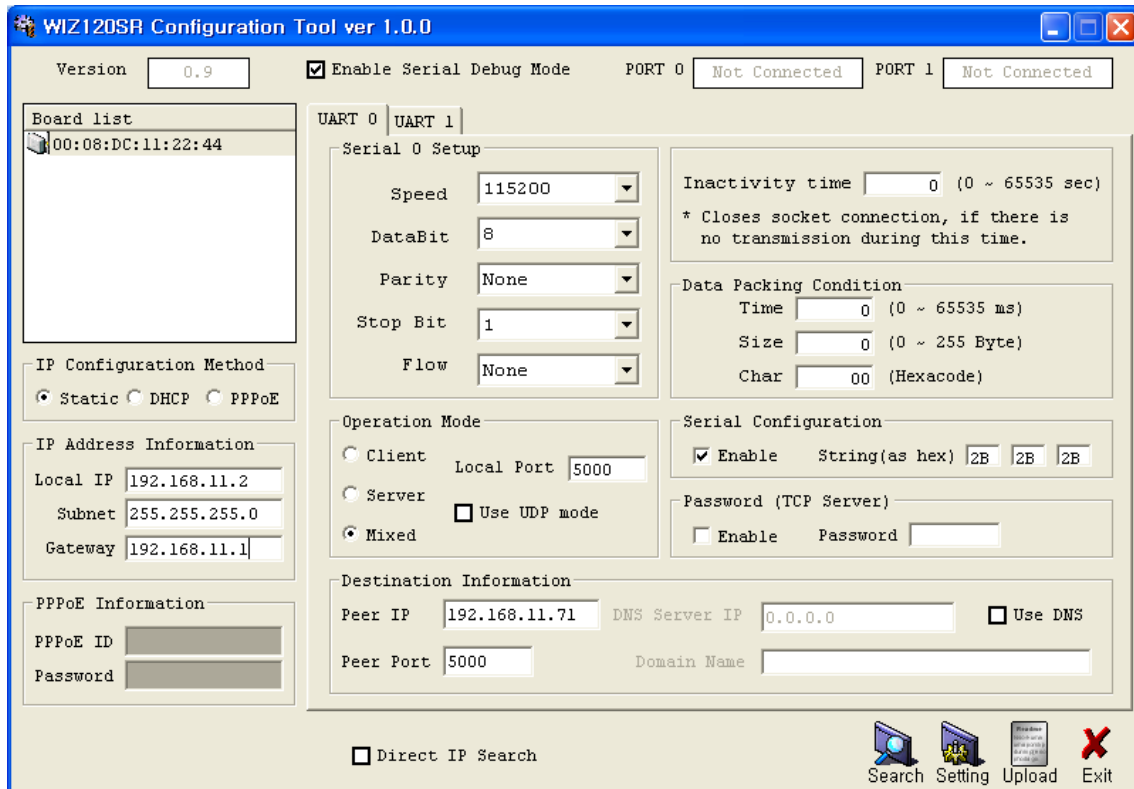
|                     |    |                                                                                                                                                                                                                             |                                                                                                              |
|---------------------|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
|                     |    | [parity] 0 : no parity, 1 : Odd, 2 :Even<br>[Flow] 0 : no, 1 : Xon/Xoff, 2 :RTS/CTS                                                                                                                                         |                                                                                                              |
|                     | WU | 0 : Disable, 1 : Enable                                                                                                                                                                                                     | Set DNS option for UART0                                                                                     |
|                     | WV | xxx.xxx.xxx.xxx (eg. 255.255.255.0)                                                                                                                                                                                         | Set DNS IP for UART0                                                                                         |
|                     | WW | xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx<br>(eg. wiznet.co.kr)                                                                                                                                                                  | Set Domain for UART0                                                                                         |
|                     | WX | xxx.xxx.xxx.xxx (eg. 192.168.11.144)                                                                                                                                                                                        | Set server IP address for UART0                                                                              |
|                     | WN | 0~65535                                                                                                                                                                                                                     | Set server port number for UART0                                                                             |
|                     | WC | XX                                                                                                                                                                                                                          | Set delimiter character in hex for UART0                                                                     |
|                     | WJ | 0~255                                                                                                                                                                                                                       | Set delimiter size for UART0                                                                                 |
|                     | WH | 0~65535                                                                                                                                                                                                                     | Set delimiter time for UART0                                                                                 |
|                     | WL | 0~65535                                                                                                                                                                                                                     | Set Inactivity timer value for UART0                                                                         |
| Set UART1 parameter | OP | 0~65535                                                                                                                                                                                                                     | Set Local IP's port number for UART1                                                                         |
|                     | OM | 0 : TCP Client, 1 : TCP Mixed, 2 : TCP Server                                                                                                                                                                               | Set the TCP operation mode for UART1                                                                         |
|                     | OK | 0 : TCP, 1 : UDP                                                                                                                                                                                                            | Set Protocol(TCP or UDP) for UART1                                                                           |
|                     | OB | XXXX<br>eg. [Baudrate]1: 115200, 2: 57600,<br>3: 38400, 4: 19200, 5: 9600,<br>6: 4800, 7: 2400,8: 1200<br>[data byte] 7 : 7bit, 8bit<br>[parity] 0 : no parity, 1 : Odd, 2 :Even<br>[Flow] 0 : no, 1 : Xon/Xoff, 2 :RTS/CTS | Set the serial baud rate, data, parity and flow control for UART1.<br>4bytes:[Baud][data byte][parity][flow] |
|                     | OU | 0 : Disable, 1 : Enable                                                                                                                                                                                                     | Set DNS option for UART1                                                                                     |
|                     | OV | xxx.xxx.xxx.xxx (eg. 255.255.255.0)                                                                                                                                                                                         | Set DNS IP for UART1                                                                                         |
|                     | OW | xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx<br>(eg. wiznet.co.kr)                                                                                                                                                                  | Set Domain for UART1                                                                                         |
|                     | OX | xxx.xxx.xxx.xxx (eg. 192.168.11.144)                                                                                                                                                                                        | Set server IP address for UART1                                                                              |
|                     | ON | 0~65535                                                                                                                                                                                                                     | Set server port number for UART1                                                                             |

|                      |    |                                                                                                                                                                                                                                |                                          |
|----------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
|                      | OC | XX                                                                                                                                                                                                                             | Set delimiter character in hex for UART1 |
|                      | OJ | 0~255                                                                                                                                                                                                                          | Set delimiter size for UART1             |
|                      | OH | 0~65535                                                                                                                                                                                                                        | Set delimiter time for UART1             |
|                      | OL | 0~65535                                                                                                                                                                                                                        | Set Inactivity timer value for UART1     |
| Get common parameter | RA | MAC Address                                                                                                                                                                                                                    | Get MAC Address                          |
|                      | RF | x.x (eg. 1.0)                                                                                                                                                                                                                  | Get the firmware version                 |
|                      | RI | IP Address                                                                                                                                                                                                                     | Get Local IP                             |
|                      | RS | Subnet Mask                                                                                                                                                                                                                    | Get Subnet mask                          |
|                      | RG | Gateway address                                                                                                                                                                                                                | Get Gateway                              |
|                      | RD | 0 : Static, 1 : DHCP, 2 : PPPoE                                                                                                                                                                                                | Get the IP configuration method          |
|                      | RT | 0 : Disable, 1 : Enable                                                                                                                                                                                                        | Get the serial command method            |
|                      | RE | xxxxxx (eg. In hex format : 2B 2B 2B)                                                                                                                                                                                          | Get the command mode character           |
|                      | RY | PPPoE ID                                                                                                                                                                                                                       | Get PPPoE ID                             |
|                      | RZ | PPPoE Password                                                                                                                                                                                                                 | Get PPPoE Password                       |
| Get UART0 parameter  | RP | Local Port Number                                                                                                                                                                                                              | Get Local IP's port number for UART0     |
|                      | RM | 0 : TCP Client, 1 : TCP Mixed, 2 : TCP Server                                                                                                                                                                                  | Get the operation mode for UART0         |
|                      | RK | 0 : TCP, 1 : UDP                                                                                                                                                                                                               | Get the Protocol for UART0               |
|                      | RB | XXXX<br>eg. [Baudrate]1: 115200, 2: 57600,<br>3: 38400, 4: 19200, 5: 9600,<br>6: 4800, 7: 2400, 8: 1200<br>[data byte] 7 : 7bit, 8bit<br>[parity] 0 : no parity, 1 : Odd, 2 : Even<br>[Flow] 0 : no, 1 : Xon/Xoff, 2 : RTS/CTS | Get the UART0 baud rate                  |
|                      | RU | 0 : Not use , 1 : Use                                                                                                                                                                                                          | Get DNS option for UART0                 |
|                      | RV | IP address                                                                                                                                                                                                                     | Get DNS IP for UART0                     |
|                      | RW | Domain name                                                                                                                                                                                                                    | Get Domain Name for UART0                |
|                      | RX | xxx.xxx.xxx.xxx (eg. 192.168.11.144)                                                                                                                                                                                           | Get the server IP address for UART0      |

|                     |    |                                                                                                                                                                                                                              |                                                                                                              |
|---------------------|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
|                     | RN | 0~65535                                                                                                                                                                                                                      | Get the server port number for UART0                                                                         |
|                     | RC | XX                                                                                                                                                                                                                           | Get delimiter character in hex for UART0                                                                     |
|                     | RJ | 0~255                                                                                                                                                                                                                        | Get delimiter size for UART0                                                                                 |
|                     | RH | 0~65535                                                                                                                                                                                                                      | Get delimiter time for UART0                                                                                 |
|                     | RL | 0~65535                                                                                                                                                                                                                      | Get Inactivity timer value for UART0                                                                         |
| Get UART1 parameter | QP | Local Port Number                                                                                                                                                                                                            | Get Local IP's port number for UART1                                                                         |
|                     | QM | 0 : TCP Client, 1 : TCP Mixed, 2 : TCP Server                                                                                                                                                                                | Get the operation mode for UART1                                                                             |
|                     | QK | 0 : TCP, 1 : UDP                                                                                                                                                                                                             | Get the Protocol for UART1                                                                                   |
|                     | OB | XXXX<br>eg. [Baudrate]1: 115200, 2: 57600,<br>3: 38400, 4: 19200, 5: 9600,<br>6: 4800, 7: 2400, 8: 1200<br>[data byte] 7 : 7bit, 8bit<br>[parity] 0 : no parity, 1 : Odd, 2 :Even<br>[Flow] 0 : no, 1 : Xon/Xoff, 2 :RTS/CTS | Set the serial baud rate, data, parity and flow control for UART1.<br>4bytes:[Baud][data byte][parity][flow] |
|                     | QU | 0 : Not use , 1 : Use                                                                                                                                                                                                        | Get DNS option for UART1                                                                                     |
|                     | QV | IP address                                                                                                                                                                                                                   | Get DNS IP for UART1                                                                                         |
|                     | QW | Domain name                                                                                                                                                                                                                  | Get Domain Name for UART1                                                                                    |
|                     | QX | xxx.xxx.xxx.xxx (eg. 192.168.11.144)                                                                                                                                                                                         | Get the server IP address for UART1                                                                          |
|                     | QN | 0~65535                                                                                                                                                                                                                      | Get the server port number for UART1                                                                         |
|                     | QC | XX                                                                                                                                                                                                                           | Get delimiter character in hex for UART1                                                                     |
|                     | QJ | 0~255                                                                                                                                                                                                                        | Get delimiter size for UART1                                                                                 |
|                     | QH | 0~65535                                                                                                                                                                                                                      | Get delimiter time for UART1                                                                                 |
|                     | QL | 0~65535                                                                                                                                                                                                                      | Get Inactivity timer value for UART1                                                                         |

**Table 6. Serial Configuration Command Code**

## 2.2 WIZ125SR Configuration with Serial Command



**Figure 2. Serial Configuration enable setting**

- ① Check WIZ125SR Firmware version. If version is lower, download the latest firmware from download page of <http://www.wiznet.co.kr>, Serial configuration function is support firmware version 2.5 or later.
- ② Connect the serial cable to 'UART 0'.
- ③ Input any three characters for the serial command mode trigger (in above Figure, 2B, 2B, 2B are input) As above Figure, click 'Enable check box' of serial configuration and save the 'Setting' button. String fact for entering configuration mode is '+++' ('+' : 0x2B)
- ④ If you finish enable setting, you can test as below procedure. This procedure is 'checking module IP and change to other IP address'

|   |                          |                                  |
|---|--------------------------|----------------------------------|
| 1 | Input "+++"              | Enter Serial Configuration mode  |
| 2 | "<E>" Check Answer       | Notice Access Success            |
| 3 | "<WI192.168.11.3>" input | Change module IP to 192.168.11.3 |

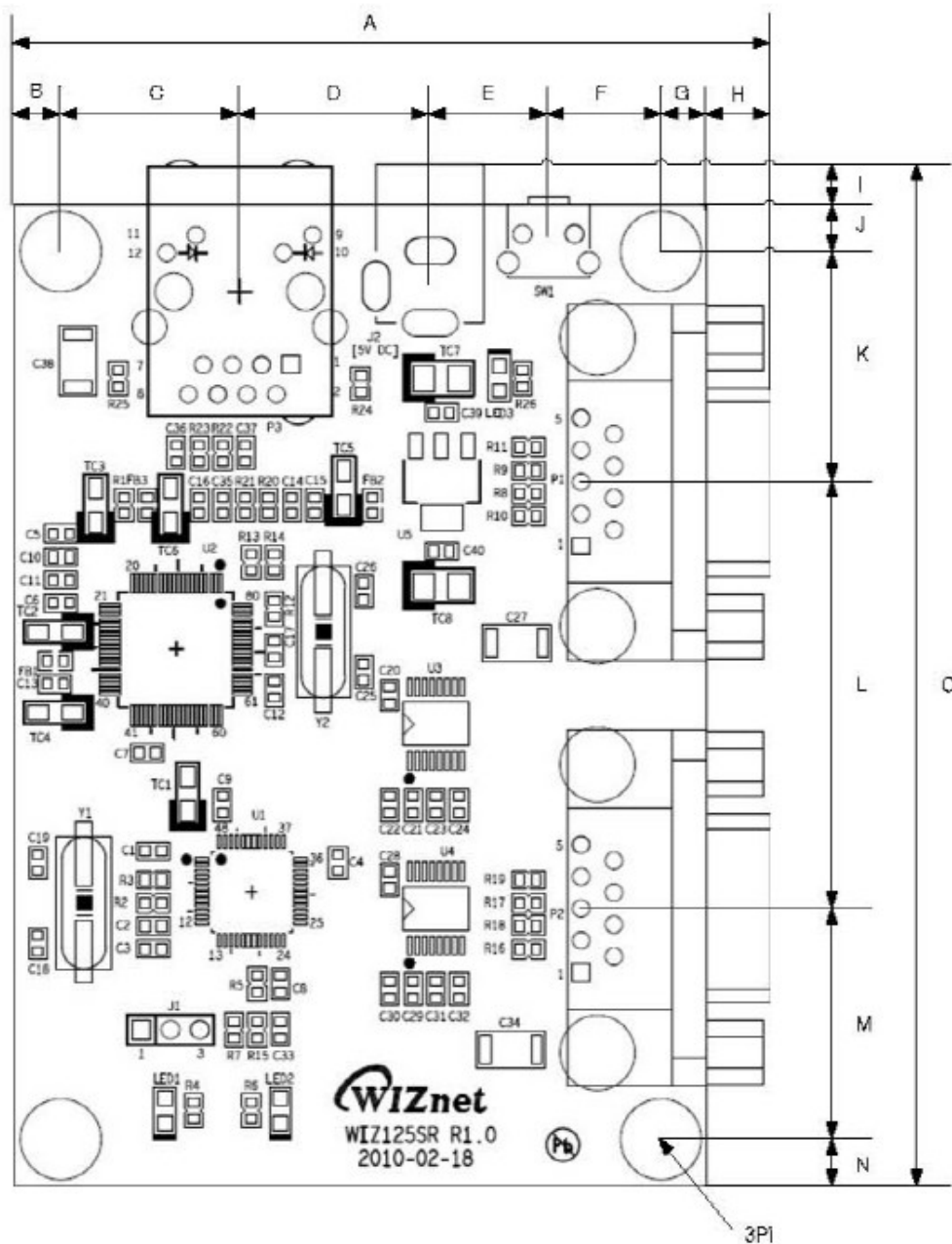
|   |                                |                                     |
|---|--------------------------------|-------------------------------------|
| 4 | "<S>" Check answer             | Notice success IP setting           |
| 5 | "<RI>" input                   | check module IP address             |
| 6 | "<S192.168.11.3>" Check answer | check the changed module IP address |
| 7 | "<WR>" input                   | reboot                              |
| 8 | "<S>" check answer             | Notice success of reboot command    |
| 9 | Module reboot                  |                                     |

**Table 7. Serial Configuration Test Procedure**



## 3. Hardware Specification

### 3.1 WIZ125SR Dimension

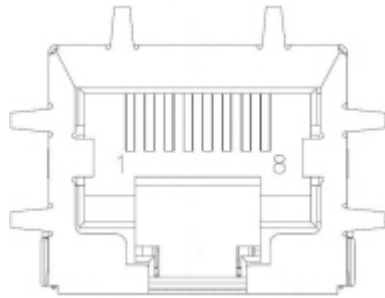


|   |      |   |     |   |      |   |      |
|---|------|---|-----|---|------|---|------|
| A | 65.5 | B | 4.0 | C | 15.5 | D | 16.5 |
| E | 10.5 | F | 9.5 | G | 4.0  | H | 5.5  |
| I | 3.5  | J | 4.0 | K | 20.0 | L | 37.0 |
| M | 20.0 | N | 4.0 | O | 88.5 |   |      |

Figure 3. WIZ125SR Dimensions (unit : mm)

## 3.2 Connector Specification

### 3.2.1 RJ-45 Connector



| Pin | Signal |
|-----|--------|
| 1   | TX+    |
| 2   | TX-    |
| 3   | RX+    |
| 6   | RX-    |

**Figure 4. RJ-45 PIN Assignment**

### 3.2.2 DB-9 Connector

| Pin Number | Signal      | Description                         |
|------------|-------------|-------------------------------------|
| 1          | -           |                                     |
| 2          | RXD1 / RXD2 | Receive Data for Port 1 & Port 2    |
| 3          | TXD1 / TXD2 | Transmit Data for Port 1 & Port 2   |
| 4          | -           |                                     |
| 5          | GND         | System Ground                       |
| 6          | -           |                                     |
| 7          | RTS1 / RTS2 | Request To Send for Port 1 & Port 2 |
| 8          | CTS1 / CTS2 | Clear To Send for Port 1 & Port 2   |
| 9          | -           |                                     |

**Table 8. DB-9 RS-232C Connector PIN-Assignment**

## 4. Warranty

WIZnet Co., Ltd offers the following limited warranties applicable only to the original purchaser. This offer is non-transferable.

WIZnet warrants our products and its parts against defects in materials and workmanship under normal use for period of standard ONE(1) YEAR for the WIZ125SR board and labor warranty after the date of original retail purchase. During this period, WIZnet will repair or replace a defective products or part free of charge.

### **Warranty Conditions:**

1. The warranty applies only to products distributed by WIZnet or our official distributors.
2. The warranty applies only to defects in material or workmanship as mentioned above in 6.Warranty. The warranty applies only to defects which occur during normal use and does not extend to damage to products or parts which results from alternation, repair, modification, faulty installation or service by anyone other than someone authorized by WIZnet Inc. ; damage to products or parts caused by accident, abuse, or misuse, poor maintenance, mishandling, misapplication, or used in violation of instructions furnished by us ; damage occurring in shipment or any damage caused by an act of God, such as lightening or line surge.

### **Procedure for Obtaining Warranty Service**

1. Contact an authorized distributors or dealer of WIZnet Inc. for obtaining an RMA (Return Merchandise Authorization) request form within the applicable warranty period.
2. Send the products to the distributors or dealers together with the completed RMA request form. All products returned for warranty must be carefully repackaged in the original packing materials.
3. Any service issue, please contact to [sales@wiznet.co.kr](mailto:sales@wiznet.co.kr)