GW312/315 Ethernet Serial Server User's Manual



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Toll Free: 1-888-908-3330 Tel: 1-732-568-1988 Email: support@neteon.net www.neteon.net



Important Announcement

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This document is intended to provide customers with brief descriptions on the product and to assist customers to get started. For detail information and operations of the product, please refer to this manual or the CD attached.

FCC WARNING Class A for Ethernet Serial Server (Model GW312/315 series)

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and radiates radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expenses.

A shielded-type power cord is required in order to meet FCC emission limits and also to prevent interference to the nearby radio and television reception. It is essential that only the supplied power cord can be used.

Use only shielded cables to connect the device's RS-232 or RS-485 port.

Be cautioned that changes or modifications not explicitly approved by NETEON Technologies could void your authority to operate the equipment.



CONTENTS

1	Introduction7
1.1.	Packaging7
1.2.	Modes of Operation7
Fig. 1.	TCP Server Mode7
Fig. 2.	TCP Client Mode
Fig. 3.	UDP Mode
Fig. 4.	Tunneling Mode9
1.3.	Hardware Description9
Fig. 5.	GW312/315 Interfaces and DIN-Rail Mounting settings9
2. LE	D STATUS10
2.1	LAN
2.2	Installation Procedures:
3. So	FTWARE
3.1	Configuration by SerialManager11
Fig. 6.	Configuring the static IP with SerialManager11
Fig. 7.	Static IP dialog window
Fig. 8.	SerialManager Auto IP Dialog Window11
3.2	Configuration by Telnet utility:
Fig. 9.	Telnet to the system
Fig. 10	0. System main menu
Fig. 11	. System configuring using Telnet
Fig. 12	. Network configuring using Telnet
Fig. 13	. changing password using Telnet
Fig. 14	. Com1 setup
Fig. 15	Link Mode-TCP server setup
Fig. 16	Link Mode-TCP client setup
Fig. 17	Link Mode-UDP client setup
Fig. 18	Com port setting

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Fig. 19.	Com port-Enabling serial data buffer	18
Fig. 20.	Setting packet delimiter timer	. 19
Fig. 21.	Setting packet delimiter-character pattern	. 19
3.3 Configu	ring Using Web Browser	. 19
3.3.1 Log in	L	. 19
Fig. 22.	login the system via Web	20
Fig. 23.	Overview	20
3.3.2 Chang	ing password	20
Fig. 24.	Change the password	21
3.3.3 Netwo	orking	21
Fig. 25.	Network setup	22
3.3.4 Config	guring GW312/315 as TCP server :	22
Fig. 26.	Com1 setup-TCP server	23
3.3.5 Config	guring GW312/315 as TCP client :	23
Fig. 27.	Com1 setup-TCP client	24
3.3.6 Pair C	onnection(Tunneling Mode)	24
Fig. 28.	Com1 setup -pair connection	25
3.3.7 Config	guring GW312/315 in UDP mode :	25
Fig. 29.	Com 1 setup –UDP mode	26
Fig. 30.	Configuration successfully updated	26
Fig. 31.	Data Transmission in a UDP Master(Client) Mode	
Fig. 32.	Data Transmission in a UDP Slave(server) Mode	27
3.4 Assignir	ng new IP Address with ARP commands	. 27
Fig. 33.	Ms-DOS command prompt window: add host computer IP to ARP table	27
Fig. 34.	Assigning a new IP address with ARP command	28
4. Using	VIRTUAL COM	28
Fig. 35.	Virtual Com connection diagram	
4.1 Setup of	a virtual COM driver	. 29
4.1.1 PC	C requirements	29
4.1.2 Cautio	ons on Use	29
4.1.3 Limita	ition	29
4.1.4 Install	ation	29

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4.1.5 Uninstall	ing	29
4.2 Virtual CO	M communications	29
4.2.1 Enabling	Virtual COM on GW312/315	29
Fig. 36. En	nabling Virtual COM port	29
Fig. 37. En	nabling Virtual COM port via Telnet	30
4.2.2 Running	Serial/IP on PC	30
Fig. 38. Se	rial/IP for Neteon control panel	30
4.3 Configuring	g Virtual COM Ports	31
Fig. 39. Co	onfiguration Wizard	31
5. SNMP S	ETUP	31
5.1 SNMP Net	work Management Platform	31
5.2 Using Netv	vorkView: An Example	32
Fig. 40. IP	address searching	32
Fig. 41. Se	arching progress	32
Fig. 42. Ne	etworkView display the devices found	33
Fig. 43. Ne	etworkView display device information	33
6.1 Preparing S	System	34
6.2 Running Sa	ample Program	34
6.2.1 TCPTES	T in Visual Basic	34
6.2.2 TCPTES	T2 in Visual C	35
TCPTEST2 I	IP_Address Port_Number	35
7 Diagr	nostics	35
7.1 Using Stan	dard TCP/IP Utility <i>ping</i> Command	35
7.3 Using TCP	TEST.EXE or TCPTEST2.EXE Sample Program	36
Appendix	A: Specification	36
A.1. Hardware	Specification	36
A.2. Software	Specification	38
A.3 Panel Layo	out and Connector Pin Assignments	38
A.3.1. Panel La	ayout	38
A.3.2.1 DB9 P	'in Assignments	39
A.3.2.2 Termin	nal Block Pin Assignments	39

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A.3.3 Ethernet Port (RJ-45) Pin Assignments	40
Note: Device will not be damage if the polarity is reverse	41
A.4 Buzzer/LED Message	41
A.4.1 Buzzer	41
A.4.2 LAN	41
A.4.3 COM Port	41
A.4.4 RUN	41
Appendix B: Upgrade System Firmware	41
B.2 Critical Issues	
B.3 Error Messages	
Appendix C: Re-loading System Firmware	43
Appendix D: Using SerialManager	44
D.1. SerialManager Introduction	
D.2. Interface	
D.3. Functions	



1 Introduction

Many industrial and Commercial devices equipped with slow serial communication ports RS-232, RS-485, and RS-422 are limited in their transmission distance of 15 m. Examples of these devices are PLC controllers, card readers, display signs, security controls, CNC controller, etc. NETEON Technologies has overcome the limit with a family of GW312/315 Series Ethernet Serial Servers. The GW312/315 sever family is designed to transmit data between one-or-more serial device and one-or-more TCP/IP device through Ethernet, and hence enhance the accessibility of the serial device through the ubiquitous TCP/IP based Ethernet.

Of the SE series, the GW312 is for RS 232/RS 422/RS 485 without isolation protection built-in, while the GW315 is for RS 422 and RS 485 devices built-in isolation protection.

1.1. Packaging

Check your package to make certain it contains the following items:

- Neteon GW312 /GW315 Ethernet Serial Device Server x 1
- 5 pins Terminal Block for Serial Connector x 1 (Only for GW315)
- 3 pins Terminal Block for Power Connector x 1 (Only for GW315)
- Wall-mounting screws x 2
- Neteon Serial Server quick start guide x 1
- Product CD containing configuration utility x 1
- Power Adapter DC Jack 12VDC, 1.25A with Lock (Only for GW312)

Optional Accessories :

- Din Rail Kit DK-25

1.2. Modes of Operation

The GW312/315 Series can be operated in one of the following 4 modes:

TCP Server Mode : GW312/315 can be configured in a TCP server mode on an Ethernet Network to wait for the host computer to establish a connection with the serial device (the client). After the connection is established, data can flow in both directions (Fig.1 TCP Server Mode).

TCP Server Mode

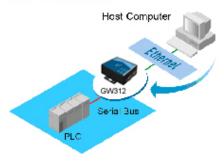


Fig. 1. TCP Server Mode



TCP Client Mode : GW312/315 can be configured in a TCP client mode on a TCP/IP Network to actively establish a connection with an applications server –the host computer. After the connection is established, data can flow in both directions (Fig 2 TCP Client Mode).

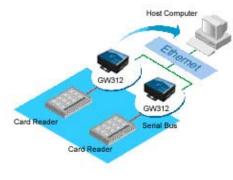


Fig. 2. TCP Client Mode

UDP Mode : UDP is a fast but non-guaranteed datagram delivery protocol. GW312/315 can be configured in a UDP mode on a TCP/IP Network to establish a connection, using unicast or broadcast data to and from a serial device to one or multiple host computers (Fig 3 UDP Mode).

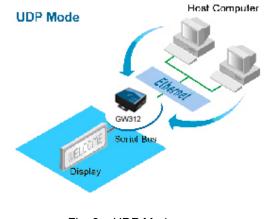


Fig. 3. UDP Mode

Tunneling Mode(Pair Connection) : The tunneling mode is used for multiple serial devices to "talk" to each other through GW312/315's and their Ethernet connections (Fig 4 Tunneling Mode). This mode is particularly useful when two serial devices are far away, because their communication distance is limited to 15 m.





Fig. 4. Tunneling Mode

1.3. Hardware Description

NOTE:

- 1. Model GW312 is for RS-232/422/485 without isolation protection built-in; GW315 is for RS422/485 with isolation protection built-in. See Appendix A.3.1 for full Panel layout.
- 2. Press the reset button to reset to the default values

Fig. 5 Shows the interfaces and the DIN-Rail Mounting settings.

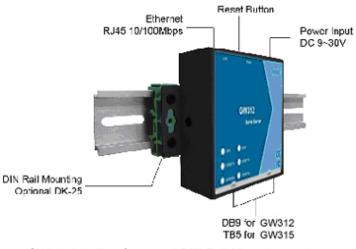


Fig. 5. GW312/315 Interfaces and DIN-Rail Mounting settings



LED STATUS LAN

M	Description
Message	Description
Off	Ethernet Disconnected
Blinking Green	Data transmitting on Ethernet at 100Mbps
Blinking Orange	Data transmitting on Ethernet at 10Mbps
	Table 1. LAN LED Status
2.1.2 COM	
Message	Description
Off	No data transmitting on COM port
Com1(2)TX Blinking	Data transmitting on COM port
Com1(2)RX Blinking	Data receiving on COM port
3	Table 2. COM Port LED Status
2.1.3 RUN	
Message	Description
On	Jumper JP1 Pin1 and Pin2 shorted to disable AP firmware
Blinking	AP firmware running normally
-	Table 3. RUN LED Status

2.2 Installation Procedures:

- <u>Step 1:</u> Connect GW312 power source Jack. (Or to a 9~30VDC Terminal Block power source which only for GW315)
- <u>Step 2:</u> Connect GW312/315 to the Ethernet network. Use a standard straight-through Ethernet cable when connected to a hub/switch, or connect to a PC's Ethernet port via a cross-over Ethernet cable. However, always make sure ones' PC is on the same sub-net as the GW312/315.
- Step 3: Connect GW312/315's serial port to a serial device.
- <u>Step 4</u>: Mount GW312/315 to a wall/panel with the screws included or to a Din-Rail rack (Require optional Din-Rail-Kit).

3. SOFTWARE

The GW312/315 default parameters are shown in the following table.

Property	Default Value
IP Address	10.0.50.100
Gateway	10.0.254
Subnet Mask	255.255.0.0
User Name	admin
Password	default
COM 1	9600,None, 8, 1, No flow control, buffer disabled, packet delimiter timer 2ms
COM 2	9600,None, 8, 1, No flow control, buffer disabled, packet delimiter timer 2ms
Link 1	Type: TCP Server, Listen port 4660, Filter=0.0.0.0, Virtual COM disabled
Link 2	Type: TCP Server, Listen port 4661, Filter=0.0.0.0, Virtual COM disabled
SysName of SNMP	name
SysLocation of SNMP	location
SysContact of SNMP	contact



3.1 Configuration by SerialManager

Use **SerialManager** on product CD to configure the GW312/315. First click "**Configuration**" (Fig. 6) then assign a static IP (Fig. 7).

SerialManager 74.0								
<u>S</u> earch	<u>F</u> irmwar	<u>C</u> onfiguration	S <u>e</u> curity <u>J</u>	∛iew <u>H</u> elp				
No.	Caution	Model		IP Addres	S	MAC Address	Host Name	Kernel 🗠
1				10.0.9.0		00:60:E9:00:05:4B		V1.7

Fig. 6. Configuring the static IP with SerialManager

Network Setting	\mathbf{X}					
Please set the appropriate IP settings for this device						
🔲 DHCP (Obtain an	IP automatically)					
IP address:	10 . 0 . 30 .100					
Subnet mask:	255.255.0.0					
Gateway:	10 . 0 . 0 .254					
Host name:						
OK	Cancel					

Fig. 7. Static IP dialog window

A DHCP server can automatically assign the IP address and all the network settings, and GW312/315 supports the DHCP client functions. By default, the DHCP client function on GW312/315 is disabled; one may activate the DHCP client functions by the following steps :

- → Execute SerialManager(Fig. 6)
- → Click on the IP address (of GW312/315)
- → Click "*Config*" to pop-up the static IP Dialog Window (Fig. 7)
- → Check "Auto IP" (Fig. 8)
- → Click "Config Now" (The GW312/315 will restart and obtain the IP from the DHCP server automatically)

Network Setting	\mathbf{X}				
Please set the appropriate IP settings for this device					
DHCP (Obtain an IP automatically)					
IP address:	10.0.195.122				
Subnet mask:	255.255.0.0				
Gateway:	10 . 0 . 0 .201				
Host name:					
<u>o</u> ĸ	Cancel				

Fig. 8. SerialManager Auto IP Dialog Window



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3.2 Configuration by Telnet utility:

One may also use Telnet utility to change configuration settings.

D:\>telnet 10.0.50.100 23

→ Enter in the "Telnet IP_address 23 "(For example, Telnet 10.0.50.100 23). The system then prompts for a password; the default password is "default". (Fig. 9)

■D:\WINNT\System32\cmd.exe - telnet 10.0.50.100 23
 ABLELink Ethernet-Serial Server
 User name:admin
 Password:■

Fig. 9. Telnet to the system

Note: One may press the reset button to reset the password.

1 Then the following main menu shall appear (Fig. 10)

🕅 D:\WINNT\System32\cmd.exe - telnet 10.0.50.100 23				<u>_ × </u>
ABLELink Ethernet-Serial Server User name:admin Password: Login ok				
0.Exit 1.Overview 2.Networking Input choice and enter(0~5):	3.Security	4.COM1	5.COM2	

Fig. 10. System main menu

Notes:

- 1. If the GW312/315 does not receive any command within 1 **minute**, Telnet will be terminated automatically.
- The changes of networking parameters will take effect only after the GW312/315 is exited and restarted.
 Select "1" from "*Input choice and enter (0~5):*" to enter "overview" .:(Fig. 11)



🖾 D:\WINNT\System32\cmd.exe - telnet 10.0.50.100 23	
ABLELink Ethernet-Serial Server User name:admin Password: Login ok	
0.Exit 1.Overview 2.Networking 3.Security 4.COM1 5.COM2	2
Input choice and enter(0~5): 1	
Overview: Model Name : SE5002 IP Address : 10.0.50.100 MAC Address : 00:60:E9:01:EC:24 SysName : name FAE SysLocation : location SysContact : contact Kernel Version: 2.34 AP Version : TerminalSrv ver3.16X Link Status : SS	
0.Exit 1.Overview 2.Networking 3.Security 4.COM1 5.COM2	2
Input choice and enter(0~5): 🔳	
<u>د ا</u>	•

Fig. 11. System configuring using Telnet

This system overview window gives the general information on IP, MAC address, SNMP information, kernel and AP version, and the connection status of the device.

Select "2" on "Input choice and enter (0~5):" to enter Networking window (Fig. 12).



D:\WINNT\System32\cmd.exe - telnet 10.0.50.100 23				- U ×
ABLELink Ethernet-Serial Server User name:admin Password: Login ok				
0.Exit 1.Overview 2.Networking	3.Security	4.COM1	5.COM2	
Input choice and enter(0~5): 2				
Networking: IP 0. DHCP (Disabled) 1. IP Address (10.0.50.100) 2. Gateway (10.0.0.254) 3. Subnet Mask (255.255.0.0)				
SNMP 4. SNMP (Enabled) 5. SysName (name FAE) 6. SysLocation (location) 7. SysContact (contact)				
Input choice and enter(0~7):				
•				۲ //

Fig. 12. Network configuring using Telnet

This screen allows for changes in **IP address, subnet mask, gateway IP address and SNMP** information. Please note that setting changes will not take effect until the device is restarted. **Note:** Press "*ESC*" key to return to the previous menu.

1. Select "3" on "Input choice and enter (0~5):" (Fig. 13).

Select D:\WINNT\System32\cmd.exe - telnet 10.0.50.100 23	
ABLELink Ethernet-Serial Server User name:admin Password: Login ok	*
0.Exit 1.Overview 2.Networking 3.Security 4.COM1	5.COM2
Input choice and enter(0~5): 3	
Do you want to change the password (y/n)?y Please input old password: Please input new password:****	
Please verify new password:**** Password changed! Press enter to continue	

Fig. 13. changing password using Telnet

2. Enter the old password on "*Please input old password*". Enter in the new password on "*Please input new password*", and again on "*Please verify new password*" fields.

Note: One may press the Reset key on the product to reset password.

Select "4" on "Input choice and enter (0~5):" (Fig. 14).

MD:\WINNT\System32\cmd.exe - telnet 10.0.50.100 23	
Input choice and enter(0~5): 4	
COM1: 1. Link Mode (TCP Server/Virtual COM Enabled/Pair Connection Disabled/Filt sabled/4660 /Alive=4*10 sec) 2. COM Port (/RS-232/115200,None,8,1/None) 3. Empty Serial Buffer When TCP connection is established(Enabled) 4. Packet Delimiter (0 ms) 5. Accept Control Command from COM port (Disabled)	ter di
Input choice and enter(1~5):	
Ø.Exit 1.Overview 2.Networking 3.Security 4.COM1 5.COM2	
Input choice and enter(0~5): 5	
COM2: 1. Link Mode (TCP Server/Virtual COM Enabled/Pair Connection Disabled/Filt sabled/4661 /Alive=4*10 sec) 2. COM Port (/RS-232/9600,None,8,1/None) 3. Empty Serial Buffer When TCP connection is established(Enabled) 4. Packet Delimiter (2 ms) 5. Accept Control Command from COM port (Disabled)	ter di
Input choice and enter(1~5):	
	•

Fig. 14. Com1 setup

Here one may configure COM1 parameters, include COM1 operation mode, port parameters, enabling or disabling serial buffer's data and packet delimiter.

- LINK Mode Setup Configure GW312/315 as TCP server : (Fig. 14)
- → Enter 1 on "Input choice and enter (1~5):" to select COM1
- → Enter 1 on "Input choice (1~5) and enter : " to select Overview
- → Input local port on "Please input local port : "
- 1. If one wants to enable IP filter :
- → Input y on "Do you want to enable IP filter(y/n)?"
- → Input source IP on "Please input Filter_IP : "
- → Double click "*Enter*" key
- 2. If one doesn't want to enable IP filter :
- → Input n on "Do you want to enable IP filter(y/n)?"
- → Double click "Enter" key
- → Input idle time in "Please input idle time to send TCP alive packet(4*10sec) :" (2->the sending TCP keep-alive packet period is 2*10 sec)

Note:

- 1. One may configure COM1 or COM2 parameter by choosing COM1 or COM2 Link
- 2. "IP filtering function is disabled by setting FILTER_IP to "0.0.0.0".
- 3. IP filter is disabled by default
- 4. If IP filter is enabled, only the source IP assigned can be connected to GW312/315.



D:\WINNT\System32\cmd.exe - telnet 10.0.50.100 23 - 🗆 🗵 0.Exit 1.Overview 2.Networking 3.Security 4.COM1 5.COM2 ٠ Input choice and enter(0~5): 4 COM1: 1. Link Mode (TCP Server/Virtual COM Enabled/Pair Connection Disabled/Filter di sabled/4660 /Alive=4*10 sec) 2. COM Port (/RS-232/115200,None,8,1/None) Empty Serial Buffer When TCP connection is established(Enabled) Packet Delimiter (0 ms) Accept Control Command from COM port (Disabled) Э. Input choice and enter(1~5): 1 Link mode 1.TCP server 2.TCP client 3.UDP 4.Virtual COM(Enabled) 5.Pair Connection(Disabled) Input choice (1 ~ 5) and enter: 1 TCP server Please input local port:4660 Do you want to enable IP filter (y/n)?y Please input FILTER_IP:10.0.0.154 Please input idle time to send TCP alive packet (4*10 sec): mode changed! Press enter to continue

Fig. 15. Link Mode-TCP server setup

- → Enter 2 on "*Input choice(1~5) and enter*:"(Fig. 15)
- → Input destination IP on "*Please input Destination IP*:" (for instance: 10. 0. 29. 123)
- → Input destination port on "Please input Destination port:" (for instance: 666)
- 1. Enter **1** for Connected always :
- → Double click "Enter" key
- → Input idle time in "Please input idle time to send TCP keep-alive packet(4*10sec) :" (2->the sending TCP keep-alive packet period is 2*10 sec)
- 2. Enter 2 for Triggering by received COM port data :
- → Input idle time to disconnect on "Please input idle time to disconnect (Osec, 1~255) :" (0->disable the function; 2 ->the serial Inactivity beyond 2 secs will cause disconnect)
- → Input error retrying time on "Please input waiting time for error retrying (0 minute,1~255) :" (0->disable the function; 2 ->GW312/315 trying to reconnect per 2 minutes)
- → Double click "*Enter*" key
- → Input idle time on "Please input idle time to send TCP keep-alive packet (4*10sec) :" (2-> sending TCP keep-alive packet period will be 2*10 sec)

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D:\WINNT\System32\cmd.exe - telnet 10.0.50.100 23 - 🗆 🗵 COM1: 1. Link Mode (TCP Server/Virtual COM Enabled/Pair Connection Disabled/Filter di sabled/4660 /Alive=2*10 sec) 2. COM Port (/RS-232/115200,None,8,1/None) Empty Serial Buffer When TCP connection is established(Enabled) Packet Delimiter (0 ms) Accept Control Command from COM port (Disabled) Э. 5. Input choice and enter(1~5): 1 Link mode 1.TCP server 2.TCP client 3.UDP 4.Virtual COM(Enabled) 5.Pair Connection(Disabled) Input choice (1 ~ 5) and enter: 2 TCP client Please input destination IP:10.0.29.123 Please input destination port:666 Please select connected type (2) (1)Connected always (2)Trigger by receiving COM port data Please input idle time to send TCP alive packet (2*10 sec): mode changed! Press enter to continue

Fig. 16. Link Mode-TCP client setup

In this example the **local port** is 4660; the **destination IP** is 10.0.29.254, and the **destination port** is 666(Fig. 17)

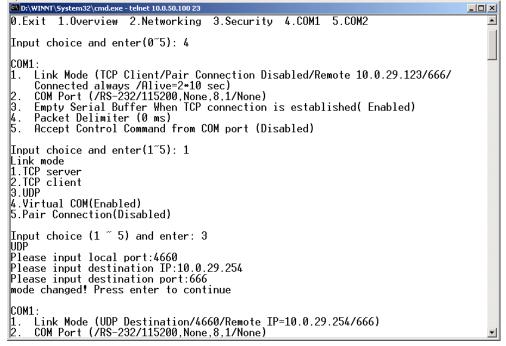


Fig. 17. Link Mode-UDP client setup



Enter 2 on "*Input choice and enter (1~5):*" of COM1, the following screen shall appear; then proceed to assign the COM port alias, set baud rate and parity, determine number of data bit and stop bit, and decide on the need of flow control (Fig. 18)

D:\WINNT\System32\cmd.exe - telnet 10.0.50.100 23 - 🗆 🗵 0.Exit 1.Overview 2.Networking 3.Security 4.COM1 5.COM2 Input choice and enter(0~5): 4 COM1: Link Mode (UDP Destination/4660/Remote IP=10.0.29.254/666) COM Port (/RS-232/115200,None,8,1/None) Empty Serial Buffer When TCP connection is established(Enabled) Packet Delimiter (0 ms) Э. 5. Accept Control Command from COM port (Disabled) Input choice and enter(1~5): 2 COM Port: RS-232 Alias name() Baud rate(115200): 3. Parity(None): Data bit(8): 5. 6. 7. Stop bit(1) Flow control(None): COM Type Selection (RS-232): Input choice and enter(1~7):

Fig. 18. Com port setting

Enter **3** from "*Input choice and enter (1~5):*" of COM1, by default COM port serial data buffer is enabled meaning that when TCP/IP Ethernet connection is broken, serial data collected from serial device will be emptied on GW312/315 once TCP/IP connection is resumed, the serial data will be sent through Ethernet connection, one may disable it if one wish(Fig. 19)

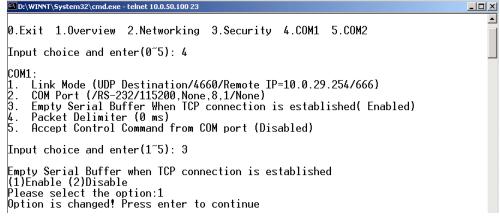


Fig. 19. Com Port-Enabling serial data buffer

Packet delimiter is a way of controlling the number of packets in a serial communication. It is designed to keep packets intack. GW312/315 provides two ways in parameter setting: 1. Packet delimiter timer and 2 Character pattern terminator. By default, packet delimiter timer is 1 ms. The range of packet delimiter timer is 0 to 30,000 msec, as shown in Fig. 20. If "character pattern is selected, for a data stream ended with "0x0a04", then the entire data buffer of the serial device is transmitted.



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D:\WINNT\System32\cmd.exe - telnet 10.0.50.100 23 - 🗆 × 0.Exit 1.Overview 2.Networking 3.Security 4.COM1 5.COM2 Input choice and enter(0~5): 4 COM1: Link Mode (UDP Destination/4660/Remote IP=10.0.29.254/666) COM Port (/RS-232/115200,None,8,1/None) 1. 2. 3. 4. Empty Serial Buffer When TCP connection is established(Enabled) Packet Delimiter (0 ms) Accept Control Command from COM port (Disabled) Input choice and enter(1~5): 4 Packet delimiter (1)Timer (2)Characters Please select delimiter type:1 Please input timer(0 ~ 30000 ms):2 Delimiter changed! Press enter to continue

Fig. 20. Setting packet delimiter timer

One may also choose character pattern as the packet delimiter indicated in Fig. 21

D:\WINNT\System32\cmd.exe - telnet 10.0.50.100 23 <u>- 0 ×</u> 0.Exit 1.Overview 2.Networking 3.Security 4.COM1 5.COM2 Input choice and enter(0~5): 4 COM1: Link Mode (UDP Destination/4660/Remote IP=10.0.29.254/666) COM Port (/RS-232/115200,None,8,1/None) Empty Serial Buffer When TCP connection is established(Enabled) Packet Delimiter (2 ms) Accept Control Command from COM port (Disabled) 1. 2. 3. 4. 5. Input choice and enter(1~5): 4 Packet delimiter (1)Timer (2)Characters Please select delimiter type:2 Please input pattern(max 2 bytes, ex:0x0d0a):

Fig. 21. Setting packet delimiter-character pattern

GW312/315 also is designed to accept serial control commands directly over Ethernet following the RFC2217 format. For more detail, contact our Technical Support.

3.3 Configuring Using Web Browser

- Make sure the PC is on the same network as GW312/315 1.
- Open a web browser, then Enter in the same IP address as the GW312/315. The default user name is 2. admin and the default password is default.
- 3. The GW312/315's network, link mode and COM ports settings can be configured on different web pages.
- 4. Click "Save Configuration" to save settings.
- Click" Restart" button to initial the change. 5.

To modify settings through the web server interface, follow the steps below.

3.3.1 Log in

1. While on the web browser, Enter in the IP address of GW312/315 of the URL. Example: http://10.0.50.100



2. The following authentication screen shall appear (Fig. 22) Enter desired **user name** and **password** then click on OK. The default user name is **admin** and the default password is **default**.

Enter Netv	vork Passwor	d ?X
? >	Please type yo	our user name and password.
<u></u>	Site:	10.0.50.100
	Realm	NeedPassword
	<u>U</u> ser Name	admin
	Password	
	□ <u>S</u> ave this p	password in your password list
		OK Cancel

Fig. 22. login the system via Web

3 The following overview screen shall appear (Fig. 23)

	Ethernet-Serial Server				
Overview	Overvie	w			
Networking	The general	device information	of Ethernet-Serial Server.		
Security		Model Name	Serial Server		
COM1		IP Address	10.0.50.100		
		MAC Address	00:60:E9:01:91:B1		
COM2		SysName	name		
		SysLocation	location		
		SysContact	contact		
		Kernel Version	V2.30		
		AP Version	TerminalSrv ver3.13X		
		Link Status	S		
	Note: About Link Status field : "S" for TCP Server mode and Listening "A" for TCP Server and Connected "c" for TCP Client mode and NOT Connected "C" for TCP Client mode and trying to Connect "B" for TCP Client mode and Connected "U" for UDP mode				

Fig. 23. Overview

3.3.2 Changing password

1. Click on the "Security" link and the following screen shall appear (Fig. 24)

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	Ethernet-Serial Server				
Overview Networking Security	in the new p	y password is null, you can c password to New Password at password is case sensit	and Verified Passw		
COM1		Old Password	•••••		
<u>COM2</u>		New Password	•••••		
		Verified Password	•••••		
		Save Configu	Iration		

Fig. 24. Change the password

 Enter the old password on "Old Password" field; enter the new password on "New Password" and the "Verified Password" fields, and then click on "Save Configuration" to update the password. Note: One may press the reset key on the product to reset password to the default value.

3.3.3 Networking

Click on *"Networking"* link and the following screen (Fig. 25) shall appear. Fill in IP information on the **TCP/IP** field. Alternatively, click on **DHCP** to obtain **auto IP address, gateway and subnet mask**. Enable SNMP by checking "*Enable*"; fill in network identification information on **SNMP** and click on the "**Save Configuration**" button to save the changes. The changes will not become effective until GW312/315 is restarted (Fig. 25)

		Ether	net-S	erial	Serve	r	
<u>Overview</u>	TCP/I	Р					
		ure network settin tion you have to re	~				
	D	НСР	🗆 Ob	tain an l	P autom	atically	
COM1	IF	PAddress	10	. 0	. 50	. 100	
COM2	D	efault Gateway	10	. 0	. 0	. 254	
	S	ubnet Mask	255	. 255	. 0	. 0	
	informatio	ng SNMP you allo on of Ethernet-Sei dentity as well by	ial Serv	er. You c	an chang	je the dev	vice
		SNMP	Ŀ	Enabl	e		
		SysName	n	ame			
		SysLocation	le	ocation			
		SysContact	c	ontact			
		Save	Configu	ration	Restart	ו	

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Fig. 25. Network setup

3.3.4 Configuring GW312/315 as TCP server :

GW312/315 is configured in a transparent mode by default (Fig. 26)

- → Click on "COM1" link and the following screen shall appear.
- → Configure GW312/315 as TCP server
- → Input local listening port "4660"

1.To enable IP filter :

- → Check "IP filter"
- → Input source IP on "Source IP"
- 2.If not to enable IP filter :
- → Don't check "*IP filter*"
- → Input idle time on "Please input idle time to send TCP keep-alive packet(sec) : " (2->the sending TCP keep-alive packet period will be 2*10 sec)
- → Input TCP Inactivity time in "TCP Inactivity Time Before Disconnect(sec) : " (2->TCP Inactivity beyond 2 secs will cause disconnect)
- → Click on "Save Configuration" button to save the changes

Notes:

- 1. One may configure COM1 or COM2 parameter by choosing COM1 or COM2 Link
- 2. IP filtering function is disabled by setting FILTER_IP to "0.0.0.0".
- 3. IP filter is disabled by default
- 4. If IP filter is enabled, only source IP assigned is connected to GW312/315.

		Ethern	et-Serial \$	Server
<u>Overview</u>	LINK1			
Networking	To choose specific working	ng mode for COM por	t.	
<u>Security</u>	• TCF	Server	OTCP Client	OUDP
COM1		Enable VirtualCOM	for Serial/IP	Enable
COM2		Pair Connection		Enable
		Local Listening Po	rt	4660
		IP Filter		Enable
		Source IP		0.0.0.0
		Idle Time Before So Alive Packet	ending TCP	1 *10 sec
			. D . f	(0~255, 0:Disable)
		TCP Inactivity Time Disconnect	e Betore	0 sec (0~255, 0:Disable)



	COM1 To configure COM port parameters.	
Overview	Serial Interface	RS-232
Networking	Alias Name	
	Baud Rate	9600 🔽
Security	Parity	None OOdd CEven CMark CSpace
	Data Bits	C 7 bits
COM2	Stop Bits	● 1 bit ● 2 bits
	Flow Control	©None ©RTS/CTS ©DTR/DSR ©Xon/Xoff
	Xon/Xoff characters	Xon:0x11 Xoff:0x13 ("0x"+ASCII Code,e.g.0x11)
	Xon/Xoff Special Control	Controling DTR to simulate receiving Xon/Xoff and reading DSR to get Xon/Xoff currently
	Empty Serial Buffer When TCP Connection is Established	●YES ONo, (Default Yes)
	Data Packet Delimiter	 Inter-character Time Gap : Particular (0~30000, 0:Disable) Characters :
	COM Type Selection	©RS232 ©RS485 ©RS422
		Save Configuration

Fig. 26. Com1 setup-TCP server

Notes:

- 1. Default COM1 of GW312/315 is 4660 (COM2 is 4661) and it is associated with the serial port COM1 or COM2. After the application program being connected to the TCP port 4660 on the GW312/315, data of one's application program are transparent to both COM1 and GW312/315.
- 2. The serial interface may have different port interfaces for different models.

3.3.5 Configuring GW312/315 as TCP client :

- → Configure GW312/315 as a TCP client. For example, the destination IP is 10.0.29.11, and the destination port is 4660 (Fig. 27)
- → On destination IP, enter "10.0.29.11"
- → On destination port, enter "4660"
- → Input idle time on "Please input idle time to send TCP alive packet (sec) :" (4->the sending TCP keep-alive packet period is 4*10 sec)
- 1. Select "*TCP Connect On Power-on*" : It keeps trying to establish TCP connection after Power on
- 2. Select "*TCP Connect On Any Serial Character*" : Any serial character will trigger to establish TCP connection
- → Input idle time to disconnect on "Serial Inactivity Time before disconnect (Osec, 1~255) :" (0->disable the function; 2 -> serial Inactivity beyond 2 secs will cause disconnect)
- → Input error retrying time on "Waiting Time Between Re-connect Attempts (0 minute,1~255) :" (0->disable the function; 2 ->GW312/315 trying to reconnect per 2 minutes)
- → Click on "Save Configuration" button to save the changes



	LINK1			
	To choose specific workir	ng mode for COM por	t.	
<u>Overview</u>	O TCP	' Server	• TCP Client	O UDP
Networking		Enable VirtualCOM	for Serial/IP	Enable
Security		Pair Connection		Enable
COM1		Destination IP		10.0.29.11
		Destination Port		4660
<u>COM2</u>				
		Idle Time Before Se	ending TCP	4 *10 sec
		Alive Packet		(0~255, 0:Disable)
		TCP Inactivity Time Disconnect	Before	⁰ sec (0~255, 0:Disable)
		• TCP Connect Or • TCP Connect Or		aracter

Fig. 27. Com1 setup-TCP client

3.3.6 Pair Connection (Tunneling Mode)

Pair connection is for two or more serial connections with their own GW312/315's to send data over Ethernet to communicate with each other. To do so, choose "*pair connection*" indicated in Fig. 28



		Etherr	net-Serial \$	Server
<u>Overview</u>	LINK1			
Networking	To choose specific workir	ng mode for COM poi	t.	
<u>Security</u>	• TCF	Server	C TCP Client	O UDP
COM1		Enable VirtualCOM	l for Serial/IP	Enable
COM2		Pair Connection		Enable
		Local Listening Po	rt	4660
		IP Filter		Enable
		Source IP		10.0.29.254
		Idle Time Before S Alive Packet	ending TCP	2 *10 sec (0~255, 0:Disable)
		TCP Inactivity Tim Disconnect	e Before	0 sec (0~255, 0:Disable)

Fig. 28. Com1 setup -pair connection

3.3.7 Configuring GW312/315 in UDP mode :

GW312/315 can be configured on a UDP mode to establish connection using unicast or broadcast data from the serial device to one or multiple host computer. Vice versa is also true.

There are 2 UDP communication Modes :

1. **Master (Client) Mode :** To establish a connection using unicast or broadcast data from the serial device to one or multiple host computer.

Note : The configuration is limited by Destination IP and Destination Port

Using broadcast data from a serial device to multiple host computers : For example, for **destination IP "10.255.255.255** "and **destination port** "**4660**", the host computer's IP addresses from

10.0.0.1~10.255.255.254 and **listening Port** at 666 can receive data sent from the serial device (Fig. 29)

Note : Broadcast IP address is limited by the Class of IP address and subnet mask. As an example, for a network of Class C subnet 192.168.1.X and a subnet mask of 255.255.255.0,,one may configure the broadcast IP address to be 192.168.1.255 (Fig. 31)



	Ethernet-Serial Server				
Qvarviaw	Link1	Obligat			
Networking	To choose specific working mode for CO	TCP Client © UDP			
Security	Virtual COM	Enable			
COM1	Destination IP	10.255.255.255			
COM2	Destination Port	666			
	Local Port	4660			

Fig. 29. Com 1 setup –UDP mode

- → On "destination IP" enter 10.0.255.255 "
- → On "destination port "enter 666".
- → On "Local port "enter 4660".
- → Click on "Save Configuration" to save the changes. Note : If the update is successful, the following screen shall appear (Fig. 30)

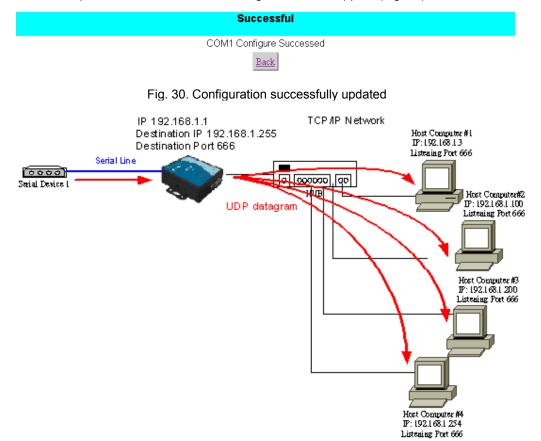


Fig. 31. Data Transmission in a UDP Master(Client) Mode

2. **Slave (Server) Mode**: To establish a connection using unicast or broadcast data from one or multiple host computer to a serial device.(Fig. 32)

Notes : The configuration is limited by the Local Listening Port (For example, on the GW312/315 listening the port is 4660 which receives data from the Host Computer).

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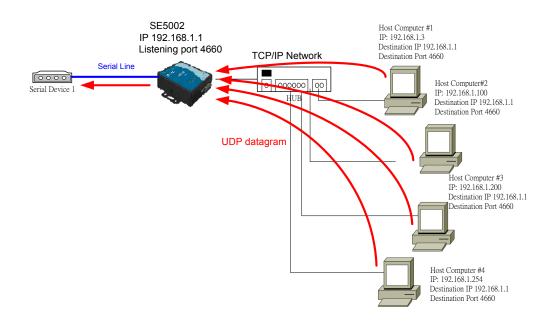


Fig. 32. Data Transmission in a UDP Slave(server) Mode

3.4 Assigning new IP Address with ARP commands

ARP (address resolution protocol) commands can be used to assign a static IP address on GW312/315 using its hardware MAC (media access control) address. The MAC address"0060E9-xxxxx" is printed on the rear side of device. The following shows how it works on MS-DOS command prompt window. Example: change IP from 10.0.50.100 to 10.0.50.101, and MAC address being 00-60-e9-11-11-01 **Step1:** Add the new host IP to the ARP table

- → Open Ms-DOS command prompt window
- → Input arp -s 10.0.50.101 00-60-E9-11-11-01(Fig. 33)



Fig. 33. Ms-DOS command prompt window: add host computer IP to ARP table

Step2: Change to the new IP via Telnet port 1(Fig. 34)

→ Input telnet 10.0.50.101 1

- Note : Telnet will fail and then GW312/315 restarts automatically. Afterward, the new IP address is changed to 10.0.50.101
- Step3: Using the new IP to configure GW312/315 via Telnet

→ Input telnet 10.0.50.101

Note:

- 1. Both PC's IP and GW312/315 's IP must belong to the same subnet.
- The changed IP address must be legal; otherwise it will change back to the default value (10.0.50.100) after restart.



 Command Prompt - telnet 10.0.50.101

 Microsoft Windows 2000 [Uersion 5.00.2195]

 (C) Copyright 1985-1999 Microsoft Corp.

 C:\>arp -s 10.0.50.101 00-60-e9-00-79-f8

 C:\>arp -a

 Interface: 10.0.154.223 on Interface 0x1000003

 Internet Address

 Physical Address

 Type

 10.6.50.101

 00-60-e9-00-79-f8

 C:\>arp -a

 Internet Address

 Physical Address

 Type

 10.6.50.101

 00-60-e9-00-79-f8

 static

 C:\>telnet 10.0.50.101 1

 Connecting To 10.0.50.101...

Fig. 34. Assigning a new IP address with ARP command

4. USING VIRTUAL COM

Virtual COM driver mode for windows converts COM data to LAN data for control of the COM port on GW312/315 via LAN. By creating virtual COM ports on the PC, the Virtual COM driver redirects the communications from the virtual COM ports to an IP address and port number on a GW312/315 that connects the serial line device to the network. Fig. 35 illustrates a Virtual COM connection diagram.

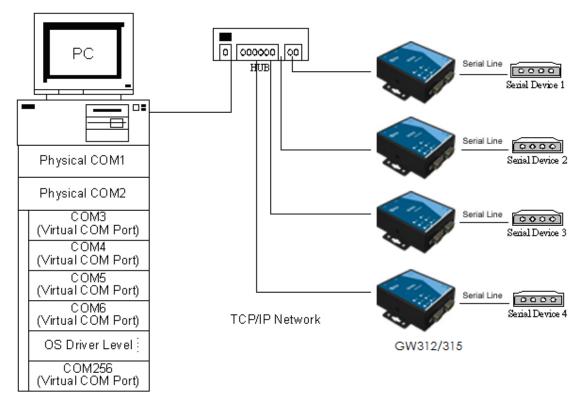


Fig. 35. Virtual Com connection diagram



4.1 Setup of a virtual COM driver

4.1.1 PC requirements

- Processor: Intel-compatible, Pentium class or faster
- Operation system: Windows Server 2003, Windows XP, Windows 2000, Windows NT 4.0 SP5 or later, Windows Me, Windows 98, Microsoft NT/2000 Terminal Server, Citrix Meta Frame
- 4.1.2 Cautions on Use

The Virtual COM driver supports firmware AP v3.0 or later for the GW312/315 Ethernet Serial Server. 4.1.3 Limitation

The Virtual COM driver provides users with up to 256 Virtual COM ports. Users may select from COM1 to COM256.

4.1.4 Installation

Make sure to turn off all anti-virus software before installation. Run the Virtual COM setup file included in the CD to install Virtual COM driver.

Select one or two COM port to become the Virtual COM ports.

4.1.5 Uninstalling

- 1. From Windows Start menu select Setting, Control Panel, Add/Remove Programs.
- 2. Select **Serial IP** in the list of installed software.
- 3. Click the **Add/Remove** button to remove the program, or From Windows Start menu select Programs, Serial IP for NETEON, **Uninstall Serial IP** to remove the program.

4.2 Virtual COM communications

4.2.1 Enabling Virtual COM on GW312/315

From the web browser, access GW312/315 by typing its IP address. Click on **COM1** link to access COM1 window. On the window, click on "*TCP Server*" and check "**Enable**" button. Then Enter in the local port number on "*Local Port*" field as indicated in Fig. 36

		Ethern	et-Serial S	Server
<u>Overview</u>	LINK1			
Networking	To choose specific workir	ig mode for COM port		
<u>Security</u>	• TCF	Server	OTCP Client	OUDP
COM1		Enable VirtualCOM	for Serial/IP	Enable
<u>COM2</u>		Pair Connection		Enable
		Local Listening Por	t	4660
		IP Filter		Enable
		Source IP		10.0.29.11
		ldle Time Before Se Alive Packet	nding TCP	2 *10 sec (0~255, 0:Disable)
		TCP Inactivity Time Disconnect	Before	2 sec (0~255, 0:Disable)

Fig. 36. Enabling Virtual COM port

One may also enable Virtual COM through Telnet by setting COM1 as a TCP server, and Enter in the local port number for COM1, then enable virtual COM as shown in Fig. 37

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Ethernet Serial Server GW312/315



D:\WINNT\System32\cmd.exe - telnet 10.0.50.100 23 _ 🗆 🗵 0.Exit 1.Overview 2.Networking 3.Security 4.COM1 5.COM2 Input choice and enter(0~5): 4 COM1 1. l CUMI: 1. Link Mode (TCP Server/Virtual COM Enabled/Pair Connection Disabled/Filter di sabled/4660 /Alive=2*10 sec) 2. COM Port (/RS-232/115200,None,8,1/None) 3. Empty Serial Buffer When TCP connection is established(Enabled) 4. Packet Delimiter (2 ms) 5. Accept Control Command from COM port (Disabled) Input choice and enter(1~5): 1 Link mode 1.TCP server 2.TCP client 3.UDP 4.Virtual COM(Enabled) 5.Pair Connection(Disabled) Input choice (1 ~ 5) and enter: 4 Virtual COM (1)Enable (2)Disable Please select one item: Fig. 37. Enabling Virtual COM port via Telnet

4.2.2 Running Serial/IP on PC

On Window Start Menu, go to \program\serial/IP for NETEON\control panel\Select Port\, then select the serial port. Then the "Serial I/P for Neteon Control Panel" window appears (Fig. 38).

🛓 Serial/IP Control P	anel 4.3.9		×			
COM4	Configuration of COM4	TD 4 11	D ())			
COM5	Connect to server:	IP Address: 10.0.50.100	Port Number: 4660			
	Accept Connections:		46603			
	Configuration Wizard					
	User Credentials Use Credentials From:	<u></u>	_			
	COM Port Options Restore Failed Connect	lions				
Select Ports						
Port Monitor						
Licensing						
Advanced						
	Close	Help	About			

Fig. 38. Serial/IP for Neteon control panel

On the right of the panel is a sample for COM 4 settings. On the left is the list of the COM ports that have

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been selected (on **Select Ports** window) for use by the Virtual COM Redirector. Change the list by clicking the **Select Ports** button.

Each COM port has its own settings. When click on a COM port, the Control Panel changes to reflect that the selected port.

Note: COM port changes become effective immediately.

4.3 Configuring Virtual COM Ports

Serial/IP COM port can be changed as follows:(Fig. 39)

- 1. Select a COM port on the list.
- 2. On IP Address of Server, enter the serial serve IP address.
- 3. On **Port Number**, enter the TCP port number of the serial server.
- 4. On **Server Credentials**, the default is **No Login Required**. If the serial server does require login by the Virtual COM Redirector, the Virtual COM Redirector must provide a username and/or password every time an application tries to access the serial server.
- Click the Configuration Wizard button and then click the Start button that shall appear on the wizard window. This step verifies that the Virtual COM Redirector communicates with the serial server. If Log display does not show errors, click Use Settings, return to the Control Panel (Fig. 39)

🛓 Configuration Wizard - COM4	×
IP Address of Server: 10.0.50.1	Port Number: 4660
Username:	Password:
↓ ☐ Test for presence of a <u>m</u> odem connected to the	server
Status:	
 Connected to Server COM Port Control Support Detected Telnet Protocol Detected Session Completed 	
Log:	
Recommendations:	
Protocol: Telaet COM Port Option: DTR disabled COM Port Option: DSR disabled COM Port Option: DCD disabled 	
💡 Start 🖉 Stop 🐴 Use Settings	Cancel

Fig. 39. Configuration Wizard

- 6. Settings on the **Connection Protocol** must match the TCP/IP protocol supported by the serial server. The Configuration Wizard is capable of determining the correct settings.
- 7. On **COM Port Options**, the settings must match the COM port behavior expected by the PC application. The Configuration Wizard will recommend such settings.

5. SNMP SETUP

5.1 SNMP Network Management Platform

GW312/315 is an SNMP device that allows many popular SNMP Network management platforms such as

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HP Open View and Sun Net Manager, to conduct on the SerialManager.

Depending on the network management tools used, GW312/315 information can be collected from running the management tools, including **IP address, DNS name, system descriptions and NIC** information.

5.2 Using NetworkView: An Example

NetworkView is a free compact network management tool from NetworkView Software, Inc. (<u>www.networkview.com</u>). It discovers all TCP/IP nodes in a network using DNS, SNMP and ports information and documents with printed maps and reports for future use.

First, download and install the tool on one's PC (Windows 2000 and Windows XP), then start NetworkView.

1. Click on the EV button to open a new file. The following screen shall appear, on Addresses field, Enter in the IP address range for searching (Fig. 40).

Discover		x
Map Information Title Description Author Discovery type	Addresses	
⊂ Single address ● <u>B</u> ange ⊂ Sub <u>n</u> et	Start 10 . 0 . 50 . 1 ≥ End 10 . 0 . 50 .101 ≥	
	<u>S</u> ettings <u>O</u> k <u>C</u> ancel <u>B</u> lank	

Fig. 40. IP address searching

2 Click on "OK" and the following dialog box shall display the searching progress (Fig. 41)

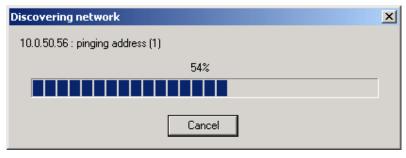


Fig. 41. Searching progress

3 After the search is complete, NetworkView will display the devices found on the main window, as shown below (Fig. 42)



. No			
N [™] Network¥iew - [Network¥iew1			
, N´ Eile Edit ⊻iew Lists Logs \	<u>V</u> indow <u>H</u> elp		
] 🗷 🍃 🖬 🔍 🎒 🛅 • 1	▫▯ १ ⊄≪(+-#	• == \ 🔍 🔍 🔍 🖉 🖉	- 🚟 🖮 🛈 🔯 😬 🖳 🏦 🔳
10.0.50.9	10.0.50.71		
ATOP Technologie	name		
ATOP Technologies, Inc.	ATOP Technologies, Inc.		

Fig. 42. NetworkView display the devices found

4 Double-click on the device icon to display information about the device, including IP Address, Company, SysLocation (Max 15 characters), SysName (Max 9 characters) and types etc (Fig. 43).

Properties	2
General NetBIOS	Snmp Tcp Ports Wmi Note Monitoring
Description	Value
SysDescr	ATOP SE5002 v2.34, TerminalSrv ver3.16X
Company	ATOP Technologies, Inc.
SysContact	contact
SysLocation	location
SysUpTime	0 days 0 h. 9 m. 6 s.
SysObjectID	.1.3.6.1.4.1.3755.1.1.3.1.1
SysName MAC Address	ATOP Technologie
NetBIOS Domain	
Community (read)	public
•	•
Addresses and Ro	outes Add to <u>O</u> ID database Edit <u>R</u> outes Labels <u>Export</u>
	OK Cancel Apply Help

Fig. 43. NetworkView display device information

Notes:

- 1. NetworkView is limited to information extracting and viewing only.
- 2. To modify the configurations, use the web server, Telnet or SerialManager configuration utilities.



6 WRITING ONE'S OWN APPLICATIONS

Before writing one's own host applications or programs to interact with GW312/315, make sure one have done the following.

6.1 Preparing System

- 1. Connect GW312/315 to power, Ethernet and serial cables
- 2. Configure GW312/315: connection type, IP address, gateway IP address, and network mask (see chapter 3 Hardware Installation).
- 3. Configure GW312/315 as TCP Server, using the default TCP port number 4660.
- 4. The host (PC) application program must be configured as a TCP client and connected to GW312/315 with designated TCP port number 4660 for COM1.
- 5. Check GW312/315 running status through SerialManager configuration utility.

6.2 Running Sample Program

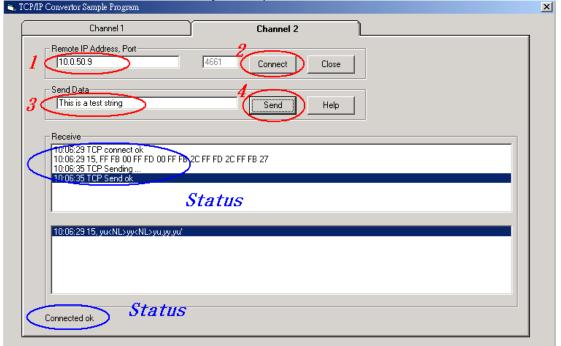
Sample programs written in VB and VC++ included in the package are provided for your reference; their source codes are also included. Test program can be found on the product CD in the directory of **\sample\vb_ap** and **\sample\vc_ap** respectively.

Two test programs, TCPTEST in Visual Basic and TCPTEST2 in Visual C++ are included.

6.2.1 TCPTEST in Visual Basic

This sample program (see below), written in Visual Basic 5.0 with Winsock Controls, shows how to exchange data between host (PC) and GW312/315 via Ethernet in two socket ports.

One may start the sample program tcptest.vbp to test different functions. For more information, press **Help**. **Note**: Be sure Microsoft visual studio family or its equivalent software is installed.





6.2.2 TCPTEST2 in Visual C

Enter in the following command on the command line prompt to run the program: TCPTEST2 IP_Address Port_Number

🔤 E:\WINNT\System32\cmd.exe - tcptest2 10.0.50.100 4660	
	▲
C:\>tcptest2 10.0.50.100 4660	
TCP Test Program 2	
Connecting to 10.0.50.100, Port=4660	
(6432000a)	
Wait to Connect	
Connect OK	

The command *tcptest2 10.0.50.100 4660* connects a TCP server of IP address *10.0.50.100* to port number *4660*. The received data is displayed on the screen and the input data is sent to the TCP server. Binary data in hex format with a leading character "\" can also be sent. For example, "\00" and "\FF" represent ASCII code 0 and 255, respectively.

A modem can also be used to connect to the serial server. Command "*AT\Od*' sends standard AT command to the modem which in return responds with "*OK\OD\OA*" message to the host application. Always use '='then Enter key to exit the program.

7 Diagnostics

There are several ways to check the status and availability of GW312/315.

7.1 Using Standard TCP/IP Utility Ping Command

Go to Windows **Start** menu, select **Run** and Enter in "**ping <TCP Server IP address>**". If the connection is established, the Reply messages are displayed; otherwise it will indicate Request timed out.

```
- 🗆 ×
🚾 C:\WINN T\system.32\cmd.exe
C:∖>ping 10.0.50.100
Pinging 10.0.50.100 with 32 bytes of data:
Reply from 10.0.50.100: bytes=32 time=10ms TTL=64
Reply from 10.0.50.100: bytes=32 time<10ms TTL=64
Reply from 10.0.50.100: bytes=32 time<10ms TTL=64
Reply from 10.0.50.100: bytes=32 time=10ms TTL=64
Ping statistics for 10.0.50.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = Oms, Maximum = 10ms, Average = 5ms
C:\>ping 10.0.50.100
Pinging 10.0.50.100 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 10.0.50.100:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```



7.2 Using SerialManager Configuration Utility Program

Use SerialManager configuration program on the product CD to check the status of GW312/315. The status and version can be read from the tool.

SerialManager ¥4.0								
Search Firmware Configuration Security View Help								
3								
No.	Caution	Model	IP Address	MAC Address	Host Name	Kernel	AP Information	
1		SW5002	10.0.50.210	00:60:E9:02:2A:77		V1.14	SW5002-WgN1[DB] V1.25	
2	1	SW5002	10.0.50.200	00:60:E9:02:83:AA		V1.14	SW5002-WgN1DB V1.25	
3		SW1601T	10.0.154.93	00:60:B3:DC:FF:EB		¥1.1	SW1601T V1.1.7.7 (Mar 1	
4		SE5516-IDE	192.168.3.1	00:60:E9:02:DA:01		¥2.14	SE5516-IDE V2.15	
5		SE5516-IDE	192.168.2.1	00:60:E9:02:DA:00		¥2.14	SE5516-IDE V2.15	
6		SE5516-IDE	192.168.1.1	00:60:E9:02:D9:FF		¥2.14	SE5516-IDE V2.15	
7		SE5516-IDE	10.0.217.254	00:60:E9:02:D9:FE		¥2.14	SE5516-IDE V2.15	
8		SE5404	10.0.156.222	00:60:E9:11:11:22		¥2.13	V2.34a	
9		SE5302-10	10.0.62.239	00:60:E9:01:BB:7C		¥1.1	CTV-0020 V1.94H ,Web V1	
10		SE5016	10.0.150.100	00:60:E9:01:91:F4		¥1.16	V1.22	
11	1	SE5016	10.0.50.200	00:60:E9:01:C1:7C		¥1.16	V1.22	
12		SE5016	10.0.50.119	00:60:E9:01:9F:D0		¥1.16	V1.22	
13		SE5002	10.0.50.123	00:60:E9:03:66:93		¥2.45	TerminalSrv ver3.16X U	
14	@	SE5001-S2	10.0.195.164	00:60:E9:03:4E:1A		¥2.35	TerminalSrv ver3.16X S	
15		SE5001-S2	10.0.50.110	00:60:E9:03:4E:19		¥2.35	TerminalSrv ver3.16X S	
16		GW51C-MAXI	10.0.51.3	00:60:E9:00:FA:3B		¥2.43	Thermo07-03-2008.EN 🛛 🗸	

For example, 'S' means that COM1 is in server mode and is not connected.

7.3 Using TCPTEST.EXE or TCPTEST2.EXE Sample Program

Sample programs TCPTEST.EXE and TCPTEST2.EXE can be used to check the status of GW312/315. Refer to chapter 6.2 for running the sample programs.

Appendix A: Specification

A.1. Hardware Specification

	Specifications		
CPU	16-bit Embedded CPU		
	• 100MHz		
Flash Memory	512K Bytes		
SDRAM	512K Bytes		
EEPROM	• 512 Bytes		
Host Communication	IEEE802.3 base band		
	TCP/IP, UDP, SNMP, HTTP, Telnet, ARP, BOOTP, DHCP, ICMP		
Reset	Built-in default key to restore factory default settings		
Watch Dog Timer	Software watch dog to auto reset		
Serial Port	Two RS-232 or RS-485/RS-422 selectable		
Communication	 RS-232: EIA-RS-232C standard, Full Duplex, DB9 		
	RS-485: 2/4 wires, Half/Full duplex, Terminal Block		
	RS-422: 4 wires, Half/Full duplex, Terminal Block		
	Parameters		
	1) Baud-rate: 1200 bps ~ 230400 bps		

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- 2) Parity: None, Even, Odd, Mark, Space
- 3) Data bits: 7,8
- 4) Stop bits: 1,2
- 5) Packet Delimiter: by inter-character timeout, by characters' delir
- 6) Flow Control: None, Hardware CTS/RTS, Software Xon/Xoff

LED indication	• RUN x 1	
	• LAN x 1	
	COM port x	4
Power Requirement	• +9~30VDC	Jao

- +9~30VDC Jack or DC +9~30V Terminal Block, 2.8 Watt Max
- Temperature
- Operation: 0 to 60
 Storage: -20 to 70
- Humidity

Housing

- 20%~90% non-condensing
- 90mm(L) x 45mm(W) x 63mm(H)



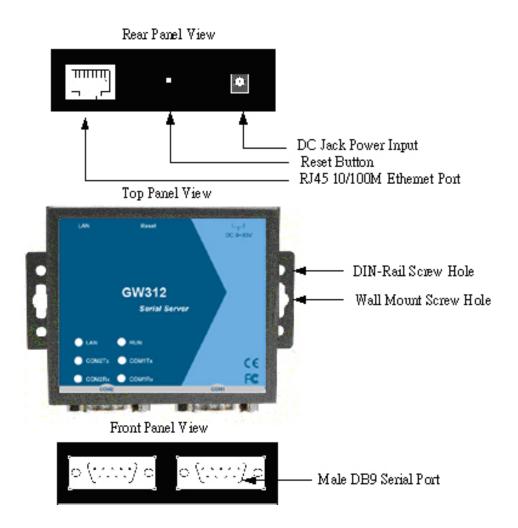
A.2. Software Specification

Item	Specifications			
Protocol	TCP, UDP, ARP, ICMP, SNMP, HTTP, Telnet, BOOTP, DHCP			
Configuration	 Configuration information for both TCP/IP and serial ports is written in the EEPROM. 			
	 Configuration utilities of Windows 98/2000/NT/XP/2003 are provided. 			
Internal Buffer Size	 TCP receiving buffer size = 8K bytes 			
	 TCP transmitting buffer size = 16K bytes 			
	 RS-232 or RS-485/RS-422 receiving buffer size = 4K bytes 			
	 RS-232 or RS-485/RS-422 transmitting buffer size = 4K bytes 			

A.3 Panel Layout and Connector Pin Assignments

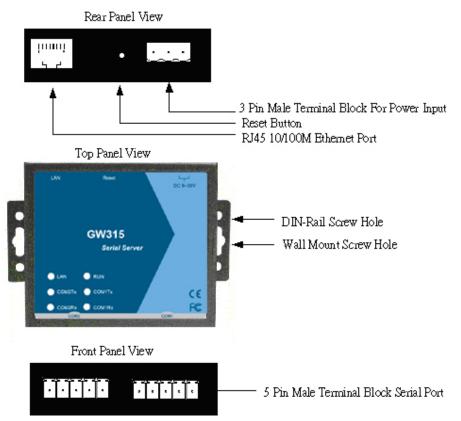
A.3.1. Panel Layout

A.3.1.1 DB9 for GW312 (RS-232/RS-422/RS-485)





A.3.1.2 GW315 (RS-422/RS-485)



A.3.2.1 DB9 Pin Assignments

The pin assignments of DB9 connector on GW312 are shown in the following table:

Pin#	RS-232 Full Duplex for GW312 Model	RS-485/RS422 2 wire, Half Duplex for GW312 Model	RS-485 4 wire, Full Duplex for GW312 Model
1	DCD	N/A	N/A
2	RXD	N/A (reserved)	TXD+
3	TXD	DATA+	RXD+
4	DTR	N/A	N/A
5	SG (Signal Ground)	SG (Signal Ground)	SG (Signal Ground)
6	DSR	N/A	N/A
7	RTS	DATA-	RXD-
8	CTS	N/A (reserved)	TXD-
9	N/A	N/A	N/A

A.3.2.2 Terminal Block Pin Assignments

The pin assignments of Terminal Block connector on GW315 are shown in the following table:



Pin#	RS-485/RS-422 4 wire, Half Duplex For GW315	RS-485 2 wire, Full Duplex For GW315
1	T+	NC
2	Т-	NC
3	R+	Data+
4	R-	Data-
5	SG (Signal Ground)	SG (Signal Ground)

A.3.3 Ethernet Port (RJ-45) Pin Assignments

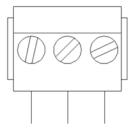
1. Category 5 UTP cable, 8 core wire.



- 2. RJ45 Connector.
- 3. RJ45 Pin Assignment

Pin Assignment	568A Definition	568B Definition	
Pin1	Green-White	Orange-White	
Pin2	Green	Orange	
Pin3	Orange-White Green-Whi		
Pin4	Blue	Blue	
Pin5	Blue-White	Blue-White	
Pin6	Orange	Green	
Pin7	Brown-White	Brown-White	
Pin8	Brown	Brown	

canon RJ-45, choose either 568A or 568B definition. Use 568A and 568B definition, respectively for a crossover cable,



F.G. VIN- VIN+

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Note: Device will not be damage if the polarity is reverse.

A.4 Buzzer/LED Message

A.4.1 Buzzer

" ^ ": Beep twice

" = ": Beep off

Message	Description		
^===^===^===^*===^*===^*	Watchdog problem, return service is required		
(1sec)			
^^^^^	Memory problem, return service is required		
^==^======^^^	Startup OK but AP firmware is disabled		
(5sec)			
^^	Startup OK and AP firmware is enabled		
(5sec)			
	Table 1. Buzzer Message		

A.4.2 LAN

Message	Description		
LED Off	Ethernet Disconnected		
LED blinking with Green	Data is transmitting on Ethernet for 100Mbps		
LED blinking with Orange	Data is transmitting on Ethernet for 10Mbps		
	Table 2. LAN LED Message		

A.4.3 COM Port

Message	Description			
COM1(2) TX LED off	No data is transmitting on COM port			
COM1(2) TX LED on blinking state	Data is transmitting on COM port			
COM1(2) RX LED off	No data is receiving on COM port			
COM1(2) RX LED on blinking state	Data is receiving on COM port			
Table 2. COM Bart J ED Massage				

Table 3. COM Port LED Message

A.4.4 RUN

Message	Description			
LED on	Jumper JP1 pin1 and pin2 are shorted to disable AP firmware in the flash memory.			
LED blinking (rate: 0.5Sec)	AP firmware is running			
	Table 4. RUN LED Message			

Appendix B: Upgrade System Firmware

New version of firmware can be downloaded from www.neteon.net

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B.1 System Upgrade Procedure

- 1. Make sure the PC and the GW312/315 are on the same network. Use command **ping** or **SerialManager** program to verify their availability.
- 2. Prepare the download tool and press any key to edit the configuration file dapdl.cfg.

	r toor and proce a	ing nog to our an	le comgarate	in me aupanerg.	
🎇 DOWNLOAD					
Auto 💌	0 🖻 🛍 🛃	8 🗗 🗚			
Please update t	d Edit download the destination to continue	IP address and	file d downloaded	file	

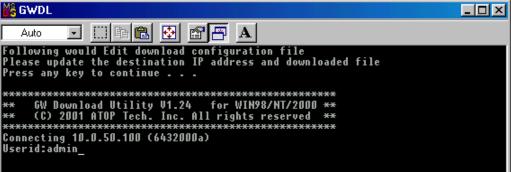
3. Edit **"dapdl.cfg"** *to* fit the system requirements, the contents of the file shall look like the following window. Be sure to save your modifications.

Remote_IP 10.0.50.100

Load U5002.hex

The first line identifies the IP address of GW312/315; the second line identifies the firmware (Hex file) name to be downloaded.

- 4. Run download.bat.,.
- 5. Input user name and password credential to begin new firmware download.



6. GW312/315 will automatically restart after downloading.



Finished - DOWNLOAD
Following would Edit download configuration file Please update the destination IP address and downloaded file Press any key to continue

Downloading U21vmap.hex
Total 1 files downloaded

B.2 Critical Issues

- 1. The upgrading process can be aborted by pressing the **<Esc>** key. GW312/315 will restart automatically and the system remains the same.
- 2. If GW312/315 does not receive any upgrading data within **30 seconds**, it will restart automatically and the system remains the same.
- 3. After the upgrading process is done, GW312/315 will program the flash memory, and the buzzer beeps 6 times before restarting. It takes around 10 seconds to complete the programming process. If an error occurs during the programming process, GW312/315 will clear the corresponding memory and the system remains the same before the process.

B.3 Error Messages

Firmware upgrade may not be successful if errors occur during the process.

Error Cause	Message	Comments
Illegal Hex file format	Hex File Text Error	
	Hex File Check-Sum Error	
	Hex File Format Error	
	Hex File End of Record Error	
GW312/315	GW312/315 ACK Start Address Error	
handshaking problem	GW312/315 ACK Length Error	
	GW312/315 Response Command Error	
Configuration file	Remote IP not found	
	Open configuration file failure	

Appendix C: Re-loading System Firmware

The AP (application program) firmware of GW312/315 can be disabled If a wrong version is downloaded.

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To disable the current version of firmware and re-load the correct one, do the followings:

- 1. Turn power off, open GW312/315 case.
- 2. Short pin1 to pin2 on jumper JP1 (on the right-top corner of the main board) to disable the current AP firmware.
- 3. Turn GW312/315 power on.
- 4. Download the correct AP firmware.
- 5. Open pin1 and pin2 on jumper JP1 to enable AP firmware.
- 6. Close the case and continue operations.

Appendix D: Using SerialManager

D.1. SerialManager Introduction

SerialManager, developed by NETEON, is a special tool for device management and configuration, and can realize the daily management on various NETEON network devices for address search, device positioning, parameter configuring, firmware downloading and so on.

D.2. Interface

The operating interface of the **SerialManager** shown as below:

/lain r	nenu	J		Device details		
Seri	ialManager	: ¥4.0				
Search	Firmware	Configuration Security	<u>V</u> iew <u>H</u> elp			
	\$	۵ 🥭	B	, B		
No.	Caution	Model	IP Address	MAC Address	Host Name	Kernel
6		SE5404	10.0.156.222	00:60:E9:11:11:22		V2.13
7		SE5302-10	10.0.62.239	00:60:E9:01:BB:7C		V1.1
8		SE5302	192.168.1.1	00:60:E9:01:BB:A3		V1.14
9		SE5302	10.0.154.90	00:60:E9:01:BB:A2		V1.14
10		SE5016	10.0.68.100	00:60:E9:01:7F:BC		V1.16
11		SE5016	10.0.30.100	00:60:E9:01:C1:7C		V1.16
12		SE5002	10.0.162.100	00:60:E9:00:00:03		V2.45
13		SE5002	10.0.161.102	00:60:E9:02:61:E7		V2.43
14		SE5002	10.0.50.130	00:60:E9:02:61:DE	name	V2.38
15	~	SE5001-S2	10.0.50.25	00:60:E9:03:27:E9		V2.35
16	0	GW51C-MAXI	10.0.195.122	00:60:E9:00:FA:3B		V2.43
17 18	0	GW51C-MAXI	10.0.195.121	00:60:E9:01:8C:18		V2.45
18	@	GW51C-MAXI	10.0.195.120	00:60:E9:00:FA:37		V2.43
<						3
Ready, 1	Fotal 38 devi	ices			[
Ready, 1	Fotal 38 devi	ices]	

D.3. Functions

D3.1 Device Search

This function is applied to search devices in the network. The user can use four ways to search devices. They are search by broadcast, search by special IP addresses, search by special MAC addresses and

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rescanning devices by using the current search way. The user can select his required search way by clicking the **Search** option on the main menu, shown as below:

Sea	adcast Searc rch by <u>I</u> P Ad	ldress Ctrl+I	* 			
Sea	rch by <u>M</u> AC	Address	IP Address	MAC Address	Host Name	Kernel
Ade	l a Device	Ctrl+A	10.0.156.222	00:60:E9:11:11:22		V2.13
Exi			10.0.62.239	00:60:E9:01:BB:7C		V1.1
_	1		10.0.68.100	00:60:E9:01:7F:BC		V1.16
)		SE5016	10.0.30.100	00:60:E9:01:C1:7C		V1.16
0		SE5002	10.0.162.100	00:60:E9:00:00:03		V2.45
1		SE5002	10.0.161.102	00:60:E9:02:61:E7		V2.43
2		SE5002	10.0.50.130	00:60:E9:02:61:DE	name	V2.38
3	_	SE5001-S2	10.0.50.25	00:60:E9:03:27:E9		¥2.35
4	0	GW51C-MAXI	10.0.195.122	00:60:E9:00:FA:3B		¥2.43
5	0	GW51C-MAXI	10.0.195.121	00:60:E9:01:8C:18		V2.45
16	@	GW51C-MAXI	10.0.195.120	00:60:E9:00:FA:37		V2.43
7		GW26A-104-10	10.0.165.100	00:60:E9:02:8C:56		V1.47
1						*

Or, select by clicking a button on the toolbar, as below:

🔁 💟 🥭 🛃 aution Model	N 🗞 😰			
water a blandal				
ution Model	IP Address	MAC Address	Host Name	Kernel
SE5404	10.0.156.222	00:60:E9:11:11:22		V2.13
SE5302-10	10.0.62.239	00:60:E9:01:BB:7C		V1.1
SE5302	192.168.1.1	00:60:E9:01:BB:A3		V1.14
SE5302	10.0.154.90	00:60:E9:01:BB:A2		V1.14
SE5016	10.0.68.100	00:60:E9:01:7F:BC		V1.16
SE5016	10.0.30.100	00:60:E9:01:C1:7C		V1.16
SE5002	10.0.162.100	00:60:E9:00:00:03		V2.45
SE5002	10.0.161.102	00:60:E9:02:61:E7	_	V2.43
SE5002	10.0.50.130	00:60:E9:02:61:DE	name	V2.38
SE5001-S2	10.0.50.25	00:60:E9:03:27:E9		V2.35
GW51C-MAXI	10.0.195.122	00:60:E9:00:FA:3B		V2.43
	10.0.195.121	00:60:E9:01:8C:18		V2.45
GW51C-MAXI	10.0.195.120	00:60:E9:00:FA:37		¥2.43
	SE5302-10 SE5302 SE5302 SE5016 SE5016 SE5002 SE5002 SE5002 SE5001-S2 GW51C-MAXI GW51C-MAXI	SE5302-10 10.0.62.239 SE5302 192.168.1.1 SE5302 10.0.154.90 SE5016 10.0.68.100 SE5016 10.0.162.100 SE5002 10.0.161.102 SE5002 10.0.50.130 SE5001-S2 10.0.50.25 GW51C-MAXI 10.0.195.122	SE5302-10 10.0.62.239 00:60:E9:01:BB:7C SE5302 192.168.1.1 00:60:E9:01:BB:32 SE5302 10.0.154.90 00:60:E9:01:BB:32 SE5016 10.0.68.100 00:60:E9:01:BB:32 SE5016 10.0.30.100 00:60:E9:01:77:BC SE5002 10.0.162.100 00:60:E9:00:00:03 SE5002 10.0.161.102 00:60:E9:02:61:E7 SE5002 10.0.50.130 00:60:E9:02:61:E7 SE5002 10.0.50.25 00:60:E9:02:61:E7 SE5001-S2 10.0.50.25 00:60:E9:02:61:E7 SE5001-S2 10.0.50.25 00:60:E9:02:61:E7 GW51C-MAXI 10.0.195.122 00:60:E9:00:FA:3B GW51C-MAXI 10.0.195.121 00:60:E9:01:82:01:82:18	SE5302-10 10.0.62.239 00:60:E9:01:BB:7C SE5302 192.168.1.1 00:60:E9:01:BB:A3 SE5302 10.0.154.90 00:60:E9:01:BB:A2 SE5016 10.0.68.100 00:60:E9:01:7F:BC SE5016 10.0.30.100 00:60:E9:01:77:BC SE5002 10.0.162.100 00:60:E9:00:00:03 SE5002 10.0.161.102 00:60:E9:02:61:E7 SE5001-S2 10.0.50.25 00:60:E9:02:61:E7 SE5001-S2 10.0.50.25 00:60:E9:02:71:59 GW51C-MAXI 10.0.195.122 00:60:E9:00:76:38 GW51C-MAXI 10.0.195.121 00:60:E9:01:80:18

D3.1.1 Broadcast Search

Once Broadcast Search is selected, a box will pop up as below:



Broadcast Search	X
Input one to broadcast:	Add
255 . 255 . 255 . 255	Delete
Select one to broadcast:	Delete
	<u>ok</u>
	Cancel

The user may type in or select different broadcast address based on his/her own requirement.

D3.1.2 Search by IP address

Once Search by IP Address is selected, an interface will pop up as below:

Search Devices by IP	Addresses				×
Select an IP address t	o search —				
[10.0.50.150]			N	ew	
			De	lete	
		-			
		D - d d -			
Search devices in the search devices in t	ne range of i	P addre:	SS		
IP address range					
From: 0	. 0	. 0		0	
To: 0	. 0	. 0		0	
		<u>v</u> k	1	<u>C</u> ancel	

Here user may have two options: Select an IP address to search or Search device in the range of IP address.

D3.1.3 Search by MAC Address

If Search by MAC Address is selected, another box will pop up as below:

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Search Devices by MAC Addresses
Select a MAC address to search-
New
Delete
Search devices in the range of MAC address
MAC address range
From: 00 : 60 : E9 : 00 : 00 : 00
To: 00 : 60 : E9 : FF : FF : FF

Here the user may search in two ways: Search a MAC address to search or Search devices in the range of MAC address

D3.1.4 Rescan

Once the user clicks the **Rescan** button on the toolbar, the SerialManager shall re-search devices by using the current search way.



D3.2 Firmware

This function is applied to downloading a firmware into a selected device.

Search		<u>Configuration</u>	urity <u>V</u> iev			~ ~				
3		from <u>D</u> isk Ctrl+1 l <u>P</u> arameter Ctrl+1		M 🚱	Z					
No.	Caution	Model		IP Address	3	MAC Address		Host Name	Kernel	ŀ
6		SE5404		10.0.156.2		00:60:E9:11:11:			V2.13	
7 8		SE5302-10 SE5016		10.0.62.23 10.0.68.10		00:60:E9:01:BB 00:60:E9:01:7F:			V1.1 V1.16	
o 9		SE5016		10.0.30.10		00:60:E9:01:C1:			V1.16	
10		SE5002		10.0.162.1		00:60:E9:00:00:			V2.45	
11		SE5002		10.0.161.1		00:60:E9:02:61:	E7		V2.43	
12		SE5002		10.0.50.13		00:60:E9:02:61:		name	V2.38	
13		GW51C-MAXI		10.0.195.1		00:60:E9:00:FA:			V2.43	
14 15		GW51C-MAXI GW51C-MAXI		10.0.195.1 10.0.195.1		00:60:E9:01:8C: 00:60:E9:00:FA:			V2.45 V2.43	
										5
	kernel or AP f	rom local disk								
		(grade fi	rom	disk				
lpgrade Seri	alManager V	74.0	Upç		rom	disk				
lpgrade Seri	alManager V	(Upç	Help	rom (disk				
lpgrade Seri Jearch	ialManager V Finnware (_	74.0		Help	E.	disk MAC Address		Host Name		
Seri earch	ialManager V Firmware (Caution	74.0 Configuration Secu Differentiation Differentiation Model SE5404		Help	22	MAC Address 00:60:E9:11:11:		Host Name	Kernel V2.13	
Seri eerch No.	ialManager V Firmware (Caution	74.0 configuration Security Configuration Sec		Help	22 9	MAC Address 00:60:E9:11:11: 00:60:E9:01:BB	1:7C	Host Name	Kernel V2.13 V1.1	
Seri eerch No.	ialManager V Firmware Q Caution	74.0 Configuration Secur Configuration Secur C		Help	22 9 1	MAC Address 00:60:E9:11:11: 00:60:E9:01:BB 00:60:E9:01:BB	1:7C 1:A3	Host Name	Kernel V2.13 V1.1 V1.14	
Seri eearch No.	Einnware C	74.0 configuration Security Configuration Sec		Help	222 9 1 0	MAC Address 00:60:E9:11:11: 00:60:E9:01:BB	1:7C 1:A3 1:A2	Host Name	Kernel V2.13 V1.1	
Seri learch No.	ialManager V Eimware (Caution	74.0 Configuration Secu Model SE5404 SE5302-10 SE5302 SE5302		Help	22 9 1 0 0	MAC Address 00:60:E9:11:11: 00:60:E9:01:BB 00:60:E9:01:BB 00:60:E9:01:BB	1:7C 1:A3 1:A2 :BC	Host Name	Kernel V2.13 V1.1 V1.14 V1.16 V1.16	
Seri Jearch	ialManager V Firmware (Caution	74.0 configuration Secur Configuration Secur Configuration Secur Configuration Configu		Help P Address 10.0.156.2 10.0.62.23 192.168.10 10.0.154.9 10.0.68.10 10.0.30.10 10.0.30.10 10.0.162.1	222 9 1 0 0 0 0 0 0 0 0 0	MAC Address 00:60:E9:11:11 00:60:E9:01:BB 00:60:E9:01:BB 00:60:E9:01:BB 00:60:E9:01:71: 00:60:E9:01:71: 00:60:E9:01:00:	1:7C 1:A3 1:A2 :BC :7C :03	Host Name	Kernel V2.13 V1.1 V1.14 V1.14 V1.16 V1.16 V2.45	
Seri Jearch	alManager (Finnware () Caution	74.0 Configuration Secur Configuration Secur Configuration Secur S		Help	222 9 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MAC Address 00:60:E9:11:11: 00:60:E9:01:BB 00:60:E9:01:BB 00:60:E9:01:BB 00:60:E9:01:7F: 00:60:E9:01:C1: 00:60:E9:01:C1: 00:60:E9:01:C1: 00:60:E9:02:61:	1:7C 1:A3 1:A2 1:BC 1:7C 1:03 1:E7	_	Kernel V2.13 V1.1 V1.14 V1.14 V1.16 V1.16 V2.45 V2.43	
Seri learch No.	ialManager V Eimware (Caution	74.0 Configuration Secu Model SE5404 SE5302-10 SE5302 SE5302 SE5302 SE5016 SE5001 SE5002 SE5002 SE5002		Help	22 9 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MAC Address 00:60:E9:11:11: 00:60:E9:01:BB 00:60:E9:01:BB 00:60:E9:01:BB 00:60:E9:01:C1: 00:60:E9:01:C1: 00:60:E9:00:C1: 00:60:E9:00:C1: 00:60:E9:00:C1: 00:60:E9:00:C1: 00:60:E9:00:C1: 00:60:E9:00:C1: 00:60:E9:00:C1: 00:60:E9:00:C1:	9:7C 9:A3 9:A2 :BC :7C :03 :E7 :DE	Host Name Name	Kernel V2.13 V1.1 V1.14 V1.14 V1.16 V1.16 V1.16 V1.16 V2.45 V2.43 V2.38	
Serii learch No. 5 7 3 3 3 1 1 2 1 3 4 4 5	ialManager V Einnware (Caution	74.0 configuration Secu Model SE5404 SE5302-10 SE5302 SE5016 SE5016 SE5016 SE5002 SE5002 SE5002 SE5002 SE5002 SE5001-S2		Help	22 9 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MAC Address 00:60:E9:11:11: 00:60:E9:01:BB 00:60:E9:01:BB 00:60:E9:01:BB 00:60:E9:01:C1: 00:60:E9:01:C1: 00:60:E9:00:00: 00:60:E9:02:61: 00:60:E9:03:27:	::7C ::A3 ::A2 ::BC ::7C ::03 ::E7 ::DE ::E9	_	Kernel V2.13 V1.1 V1.14 V1.14 V1.16 V1.16 V1.16 V2.43 V2.43 V2.35	
Serii earch No. 3 3 10 11 12 13 4 5 6	alManager V Firmware (Caution	74.0 Configuration Secu Model SE5404 SE5302-10 SE5302 SE5302 SE5302 SE5016 SE5001 SE5002 SE5002 SE5002		Help	22 9 1 0 0 0 0 0 0 0 2 2 2 2	MAC Address 00:60:E9:11:11: 00:60:E9:01:BB 00:60:E9:01:BB 00:60:E9:01:BB 00:60:E9:01:C1: 00:60:E9:01:C1: 00:60:E9:00:C1: 00:60:E9:00:C1: 00:60:E9:00:C1: 00:60:E9:00:C1: 00:60:E9:00:C1: 00:60:E9:00:C1: 00:60:E9:00:C1: 00:60:E9:00:C1:	9:7C 9:A3 9:A2 :BC :7C :03 :E7 :DE :E9 :3B	_	Kernel V2.13 V1.1 V1.14 V1.14 V1.16 V1.16 V1.16 V1.16 V2.45 V2.43 V2.38	
Seri learch No.	alManager (Firmware (Caution (@ @	74.0 configuration Secu Configuration Secu Model SE5404 SE5302 SE5302 SE5016 SE5016 SE5016 SE5002 S		Help Address 10.0.156.2 10.0.62.23 192.168.1 10.0.154.9 10.0.68.1 10.0.68.1 10.0.68.1 10.0.68.1 10.0.61.1 10.0.50.13 10.0.50.13 10.0.50.25 10.0.595.1	22 9 1 0 0 0 0 0 0 22 21	MAC Address 00:60:E9:11:11: 00:60:E9:01:BB 00:60:E9:01:BB 00:60:E9:01:BB 00:60:E9:01:7F: 00:60:E9:01:7F: 00:60:E9:02:61: 00:60:E9:02:61: 00:60:E9:02:61: 00:60:E9:02:61:	1:7C 1:A3 1:A2 1:BC 1:7C 1:C 1:C 1:E9 1:3B 1:18	_	Kernel V2.13 V1.1 V1.14 V1.16 V1.16 V1.16 V2.45 V2.43 V2.35 V2.43	

The user can enter the window for downloading by firstly clicking a designated network device, and then selecting the submenu option **Upgrade from disk** in the main menu option **Firmware**, or directly clicking the

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button **Upgrade from disk**. And then the user can select and download the required firmware from the disk, as shown in the figure below:

Download Firmware from Disk
Please select a kernel firmware or AP firmware from the disk, and then download it to the device SE5002 (10.0.50.150).
Current versions:
Kernel: V2.38
AP: TerminalSrv ver3.16X CS
C Download kernel firmware Y:咬管中心/Release/FW/ 姨錄/SW/5002/sw/500/
Download AP firmware
Y:\这管中心\Rele\$se\FW
☐ Apply for all selected devices have same model ☐ Pop up report dialog
Pop up Authorize dialog
Upgrade <u>C</u> ancel

The user can also select several same devices at one time, and realize the firmware updating for them by selecting **Apply for all selected devices have same model**.

earch	Upgrade	<u>Configuration</u> <u>Security</u> from <u>D</u> isk Ctrl ad Parameter <u>Ctrl+P</u>		ih ih		
No.	Caution	Model	IP Address	MAC Address	Host Name	Kernel
		SE5404	10.0.156.222	00:60:E9:11:11:22		¥2.13
		SE5302-10	10.0.62.239	00:60:E9:01:BB:7C		¥1.1
		SE5016	10.0.68.100	00:60:E9:01:7F:BC		V1.16
		SE5016	10.0.30.100	00:60:E9:01:C1:7C		V1.16
0		SE5002	10.0.162.100	00:60:E9:00:00:03		V2.45
1		SE5002	10.0.161.102	00:60:E9:02:61:E7		V2.43
2		SE5002	10.0.50.130	00:60:E9:02:61:DE	name	¥2.38
3	0	GW51C-MAXI	10.0.195.122	00:60:E9:00:FA:3B		V2.43
4	0	GW51C-MAXI	10.0.195.121	00:60:E9:01:8C:18		V2.45
5	@	GW51C-MAXI	10.0.195.120	00:60:E9:00:FA:37		V2.43

In addition, for some devices with JFFS2 file system supported, the user can download the related parameter data into the device that supports the JFFS2 file system through a submenu **Download Parameter**. See details as the figure below:

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Note: Some of old firmware version did not support SerialManual firmware upgrade function. Please refer to appendix "Upgrade System Software "for detail.

D3.3 Security

This function is applied to the security protection for the network devices, so as to supply some necessary protection to a device for configuration modifying, configuration leading-in and leading-out, and some other important functions. Here three functions are mainly supplied, including: **Login**, **Logout** and **Change Password**, shown as the figure below:

	Login	Logout			
	rialManager ¥4.0				
<u>S</u> earch	h <u>F</u> irmware <u>C</u> onfiguration S <u>e</u> curi	ity View <u>H</u> el			
3	(\$ 🖏 🥭	N & 2			
No.	Caution Model	IP Address	MAC Address	Host Name	Kernel 🔼
6	SE5404	10.0.156.222	00:60:E9:11:11:22		V2.13
7	SE5302-10	10.0.62.239	00:60:E9:01:BB:7C		V1.1
8	SE5302	192.168.1.1	00:60:E9:01:BB:A3		V1.14 🔤
9	SE5302	10.0.154.90	00:60:E9:01:BB:A2		V1.14
10	SE5016	10.0.68.100	00:60:E9:01:7F:BC		V1.16
11	SE5016	10.0.30.100	00:60:E9:01:C1:7C		V1.16
12	SE5002	10.0.162.100	00:60:E9:00:00:03		V2.45
13	SE5002	10.0.161.102	00:60:E9:02:61:E7	_	V2.43
14	SE5002	10.0.50.130	00:60:E9:02:61:DE	name	V2.38 📄
15	SE5001-S2	10.0.50.25	00:60:E9:03:27:E9		V2.35
16	@ GW51C-MAXI	10.0.195.122	00:60:E9:00:FA:3B		V2.43
17	@ GW51C-MAXI	10.0.195.121	00:60:E9:01:8C:18		V2.45
18	@ GW51C-MAXI	10.0.195.120	00:60:E9:00:FA:37		V2.43
					_
					~
<					>
Readv.	. Total 38 devices				

D3.3.1 Login

This function is applied to the login to any network device, as some important devices can only be operated after a successful login, shown as the figure below:

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Login	X				
Enter a user device.	name and password to login to this				
Device:	SE5002 IP:10.0.50.150				
User Name:	admin				
Password:					
Apply for all selected devices					
	Login Cancel				

The user can also select several devices at one time, and log in them at the same time by selecting **Apply** for all selected devices.

D3.3.2 Logout

This function is applied to the logout from any network device, as the user should always carry out a logout after he/she has finished the operating action to any important device, shown as the figure below:



The user can also select several devices at one time, and log out them at the same time by selecting **Apply** for all selected devices.

D3.3.3 Change Password

This function is applied to modifying the password for logging in any network device, but can only be realized after a successful log-in, shown as the figure below:



Change Password						
To change your device (SE5002, IP:10.0.50.150) password, please provide the following information and then click OK.						
Old Password:						
New Password:						
Verified Password:						
Г	Apply for all selected devices					
	OK Cancel					

The user can also select several devices at one time, and modify their pins at the same time by selecting **Apply for all selected devices**.

D3.4 Configuration

This function is applied to the configuring, import and export of work parameters for any network device, and here are mainly supplied with: 'Network ...', 'COM Port...', 'Locate', 'Reset', 'Erase Flash', 'Import Setting...', 'Export Setting...', 'Virtual COM...', 'Config by IE' and 'Options', and some other application functions. The user can carry out a configuration operating through

menu or by clicking the corresponded button on the toolbar, shown as the figure below:

No. Caution COM Port Ctrl+P Address MAC Address Host Name Kern 6 Locate 0.62.239 00:60:E9:01:BB:7C V1.1 7 Reset 0.156.90 00:60:E9:01:0D V1.1 9 Import Setting 0.68.100 00:60:E9:01:7F:BC V1.1 10 Import Setting 0.162.100 00:60:E9:00:00:03 V2.4 11 Export Setting 0.161.102 00:60:E9:00:261:E7 V2.4 12 Virtual COM 0.50.130 00:50:E9:00:261:DE name V2.3 13 @ Config by browser 0.195.122 00:60:E9:00:76:3B V2.4 15 @ Ontime 0.195.120 00:60:E9:00:FA:37 V2.4	Seen	ien Vanager ch Finnyare		urity <u>V</u> iew Ctrl+N Ctrl+S	Help	\$ \$		
6 Locate 0.62.239 00:60:E9:01:BB:7C V1.1 7 Reset 0.156.90 00:60:E9:01:0D:0D V1.1 8 Erase Flash 0.68.100 00:60:E9:01:7F:BC V1.1 9 Import Setting 0.30.100 00:60:E9:01:01:77: V1.1 10 Import Setting 0.162.100 00:60:E9:00:00:03 V2.4 11 Export Setting 0.161.102 00:60:E9:02:61:E7 V2.4 12 Virtual COM 0.50.130 00:50:E9:00:76:32B V2.4 14 @ Config by browser 0.195.122 00:60:E9:00:18:18 V2.4 15 @ Outions 0.195.120 00:60:E9:00:FA:37 V2.4	No	Caution					Host Name	Kern
10 Import Setting 0.162.100 00:60:E9:00:00:03 V2.4 11 Export Setting 0.161.102 00:60:E9:02:61:E7 V2.4 12 Virtual COM 0.50.130 00:60:E9:02:61:DE name V2.3 13 @ 0.195.122 00:60:E9:00:FA:3B V2.4 14 @ Config by browser 0.195.121 00:60:E9:00:FA:37 V2.4 15 @ Outions 0.195.120 00:60:E9:00:FA:37 V2.4	7 8		<u>R</u> eset		.0.156.90 .0.68.100	00:60:E9:0D:0D:0D 00:60:E9:01:7F:BC		V1.1 V1.1 V1.1
13 0 13 0.195.122 00:60:E9:00:FA:3B V2.4 14 0 Config by browser 0.195.121 00:60:E9:01:8C:18 V2.4 15 0 Outloop 0.195.120 00:60:E9:00:FA:37 V2.4	10 11		Export Setting		.0.162.100 .0.161.102	00:60:E9:00:00:03 00:60:E9:02:61:E7		V1.1 V2.4 V2.4
	13 14	0	Config by brows	r	0.195.122 .0.195.121	00:60:E9:00:FA:3B 00:60:E9:01:8C:18	name	V2.4 V2.4
		12	Options					¥2.2

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D3.4.1 Network ...

The user can modify the IP address of any selected device, shown as the figure below:

Network Setting	\mathbf{X}					
Please set the approp this device (SE5002,						
DHCP (Obtain an IP automatically)						
IP address:	10 . 0 . 50 .150					
Subnet mask:	255.255.0.0					
Gateway:	10 . 0 . 0 .254					
Host name:	name					
<u>O</u> K	Cancel					

D3.4.2 COM Port ...

NETEON has developed various network products, and some of the NETEON devices are specially supplied to some serial-port servers, while this function is applied to the configuration of COM port parameters.

Note: This function can be realized only after a successful login, shown as the figure below:



COM Ports Setting (SE5002, 10.0.50.150)	×					
COM1 COM2						
Link mode: C TCP server mode C UDP mode Option						
COM property: <u>R</u> efresh						
Alias name: Port type: O R\$232 O R\$485-2W O R\$485-4W						
Baud rate: Data bits: Parity: C 600 C 19200 C 7 bits © None C 1200 C 38400 © 8 bits © Odd C 2400 C 57600 Stop bits: © Mark © 9600 © 1 © 2 © Space						
C 1 C 2 C S						
▲ Apply for all selected same model devices 確定 取消						

The user can also select several devices at one time, and carry out the configuration for them at the same time by selecting **Apply for all selected same model devices**

Note:

- 1 · COM tags: generated automatically according to the COM port number of the device. If a device has 4 COM port, there will be 4 tags: respectively COM1, COM2, COM3, COM4, and the like.
- 2 · Connecting mode: it means the connecting mode between the serial-port server and other network devices. Each COM corresponds to a connecting mode through which the transferring data will not be interfered by that in another connection. The user can set each corresponded connecting mode and the working parameter by clicking the button "Option", shown as the figure below:



TCP Server Mode			TCP Clier	nt Mode		X
Local port: 4660 Specify IP address: Enable virtual COM mode OK Cancel TCP Server mode			Destination 10 Destination C Enable	. 0 . n port: virtual CC	29 . 123 666	
TCP Server mode			TCP	Client n	node	
	UDP Mode	9				
		IP address: . 0 . 0	. 0			
	Destination	port: 1				
	Local port:	0				
	<u>о</u> к	<u>C</u> a	ncel			

UDP mode

3 · COM port property: it mainly represents the working parameter of the serial port setting, including: serial-port working type, baud rate, data bit, stop bit, parity bit, data packet delimiter and flow control, etc.

D3.4.3 Locate

The user can apply this function to locate a device when he knows it's IP address, but doesn't know its position. If a device is selected, the device will appear with singing by which the user can locate the device through the submenu option **Locate** or clicking the **Locate** button on the toolbar.

D3.4.4 Reset

The device should be restarted after a successful modification of parameter configuration. And the user can carry out a restart through the submenu option **Reset**.

D3.4.5 Erase Flash

Some devices are supplied to the user with a certain capacity of Flash memory to save the user's data. And the user can erase the Flash through the submenu option **Erase Flash** or clicking the **Erase Flash** button on the toolbar when the memory capacity is to be used up or the history data are unnecessary to be saved.



D3.4.6 Import Setting ...

If a network has a large number of devices which are used for a same purpose, it would be very complicated to carry out the parameter configuration for each of the devices in the network one by one, while the user can import the parameter information of a standard parameter file directly into all the devices of the network through the submenu option **Import setting** ... or clicking the **Import setting** ... button on the toolbar, thus the work procedures can be largely reduced, shown as the figure below:

Import a file to SE50	01-85				
Open a file: D:\D	evice Manager 3	.1\Setting	gs\SE5001-S2	2.adm	
Model: SE5001	-S2				
-IP setting:			_SNMP setti	ng:	
IP address:	10.0.50	.100	Name:	name	
Subnet mask:	255.255.0	. 0	Location:	location	
Default gateway:	10.0.0	.254	Contact:	contact	
COM ports setting:					
Selected COM Port:	COM1	•	•		
Туре:	RS232	Alias	name:		
Baud rate:	9600	Data I	bits:	8 bits	
Stop bits:	1 bit	Parity	:	None	
Flow control:	None				
Packet delimiter:		2 ms			
Keep serial buffer:		Disab	led		
Link mode:	TCP server	mode / V	'irtual COM: D	isabled	
	Local port: 4	4660			
Apply for all select	ted devices have	same m	odel		
🔲 Popup this dialog v	vhen import setti	ngs to the	e next device		
			Ōĸ	<u>C</u> ar	ncel

The user can also select several devices at one time, and lead the parameter information of a standard parameter file into all the selected devices by selecting **Apply for all selected devices have same model**.



D3.4.7 Export Setting...

If a network has a large number of devices which are used for a same purpose, it would be very complicated to carry out the parameter configuration for each of the devices in the network one by one, while the user can save the parameter information of a standard device into a parameter file through the submenu option **Export setting...** or clicking the **Export setting...** button on the toolbar, thus the parameter information can be led in over again from this parameter file when the user is to carry out a configuration for any other device, shown as the figure below:

Export SE5002 Settin	ngs	Σ	×			
IP setting: IP address: Subnet mask: Default gateway:	10.0.50. 255.255.0. 10.0.0.	. 0 Location:				
COM ports setting:	COM1 RS232					
Baud rate: Stop bits: Flow control:	9600 1 bit None	Data bits: 8 bits Parity: None				
Packet delimiter: Keep serial buffer: Link mode:	TCP client mo	0x0d0a Disabled ode / Virtual COM: Enabled				
	Destination IF Destination p	P address: 10.0.29.123 port: 666				
Save to a file: D'\SE5016 Standard Edition_89890056 V1.5\configu						
		QK Cancel				

The user can also select several devices at one time, and save the parameter information of these selected devices into a designated parameter file by selecting "Save all the selected devices".

D3.4.8 Virtual COM

Some devices are supplied with the function of virtual serial port, and the user can carry out any related setting through the submenu option "Virtual COM", shown as the figure below:

Virtual COM Setti	ngs 🔀
Select Port:	
Server IP:	10 . 0 . 50 . 150
Server Port:	4660
	Set
	Advanced Close

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D3.4.9 Configure by IE

Some devices are supplied with build-in Web servers, and the user can carry out any parameter setting directly through the submenu option **Config by IE**, shown as the figure below:

	Ethernet-Serial Server				
	Overvie	ew			
Networking	The general	I device information of	of Ethernet-Serial Server.		
<u>Security</u>		Model Name	Serial Server		
		IP Address	10.0.50.100		
<u>COM1</u>		MAC Address	00:60:E9:01:91:B1		
COM2		SysName	name		
		SysLocation	location		
		SysContact	contact		
		Kernel Version	V2.30		
		AP Version	TerminalSrv ver3.13X		
		Link Status	S		
			ode and Listening Id Connected Ide and NOT Connected Ide and trying to Connect		

D3.4.10 Option

The option is mainly applied to setting some common work rules of SerialManager, such as: search for the time interval of a network device, or whether to display any device indication and so on, shown as the figure below:



D3.5 View

The user can select a display mode of the network device according to his/her own requirement through the menu option "View", such as: display in sequence of device module name, or display in sequence of IP address and so on, shown as the figure below:

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Se	rialManager	r ¥4.0					×
Search	<u>F</u> irmware	Configuration Secur	ity <u>V</u> iew <u>H</u> elp				
3	(🛟 🖇) 🥭 🛃	N & 2				
No.	Caution	Model	IP Address	MAC Address	Host Name	Kernel	^
6		SE5404	10.0.156.222	00:60:E9:11:11:22		¥2.13	
7		SE5302-10	10.0.62.239	00:60:E9:01:BB:7C		V1.1	
8		SE5302	192.168.1.1	00:60:E9:01:BB:A3		V1.14	-
9		SE5302	10.0.154.90	00:60:E9:01:BB:A2		V1.14	
10		SE5016	10.0.68.100	00:60:E9:01:7F:BC		V1.16	
11		SE5016	10.0.30.100	00:60:E9:01:C1:7C		¥1.16	
12		SE5002	10.0.162.100	00:60:E9:00:00:03		¥2.45	
13		SE5002	10.0.161.102	00:60:E9:02:61:E7	_	V2.43	
14		SE5002	10.0.50.130	00:60:E9:02:61:DE	name	V2.38	=
15	_	SE5001-S2	10.0.50.25	00:60:E9:03:27:E9		V2.35	
16	0	GW51C-MAXI	10.0.195.122	00:60:E9:00:FA:3B		V2.43	
17	@	GW51C-MAXI	10.0.195.121	00:60:E9:01:8C:18		V2.45	
18	@	GW51C-MAXI	10.0.195.120	00:60:E9:00:FA:37		V2.43	
<							~
						>	
Ready,	Total 38 devi	ces					1