SystemBase A3E1E819 CS-Lan Converter User Manual

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A3E1E819 CS-Lan Converter
User Manual

Revision History

Revision Date	Document Version	Pages	Description
July. 20. 2015	1	All	Initial release

Contents

Overview

This chapter is intended to provide the CS-LAN-related data, one of the serial converter devices manufactured by the system base.

About this Manual

This manual is intended to describe the connection and communication, setting, and other management regarding the CS-LAN.

Reader

This manual was prepared for the users of CS-LAN. It is recommended to thoroughly read and understand this manual prior to using or setting the CS-LAN. This manual includes the application of hardware level and settings of a software level. This manual is intended to help the users easily control and manage the device to be connected
with CS-LAN.

Documents

The technical documents related to CS-LAN are listed as follows.

Document	Description
User Manual	Description of integration, settings, and management of CS-LAN
COM Port Redirector User Manual	Description of the uses of SystemBase COM Redirector
Westview User Manual	Description of TestView – Comport, TCP, and UDP test program
SGConfig Manual	Description of utility uses

Please visit **http://www.sysbas.com/** to download the CS documents, as well as the latest software and firmware. You can be also provided with technical support via FAQ or board.

Document	Description
CS-LAN Spec Sheet	CS-LAN Specifications
CS-LAN White Paper	General overview of convertor, description of background and technology, and market environment

All documents provide the latest version at the homepage. The contents of the document can be modified without prior notification.

Technical Supports

system base provides technical support through two methods below:

1. Send an e-mail to our technical support team at **tech@sysbas.com** to receive fast responses. Any questions, requests, suggestions or comments are welcomed.
2. For instant response, call us. Our technical team will always provide detailed consultation and guides through a simple phone call.
The phone number is: +82-2-855-0501 (ext. 233)
Available from Monday to Friday, 9:00 ~ 18:00 KST. We are closed on weekends and holidays.

Getting Started

This chapter provides the overview and core function of CS-LAN, and its package composition and application field.

Overview

CS-LAN is a microscopic wire converter that provides Ethernet wire communication to equipment supporting RS232.
The communication specification supports IEEE 802.3 10/100Base-TX and amounts to RS232 standard DE9 connector, thereby providing the serial communication speed at the highest 921.6Kbps and Ethernet communication speed at 100Mbps. A CS-LAN is a device that connects the remote control, monitoring, and various types of serial devices
in the device connected via a network.

Features

The basic features of CS-LAN are as follows. Other functions are also described throughout this manual.

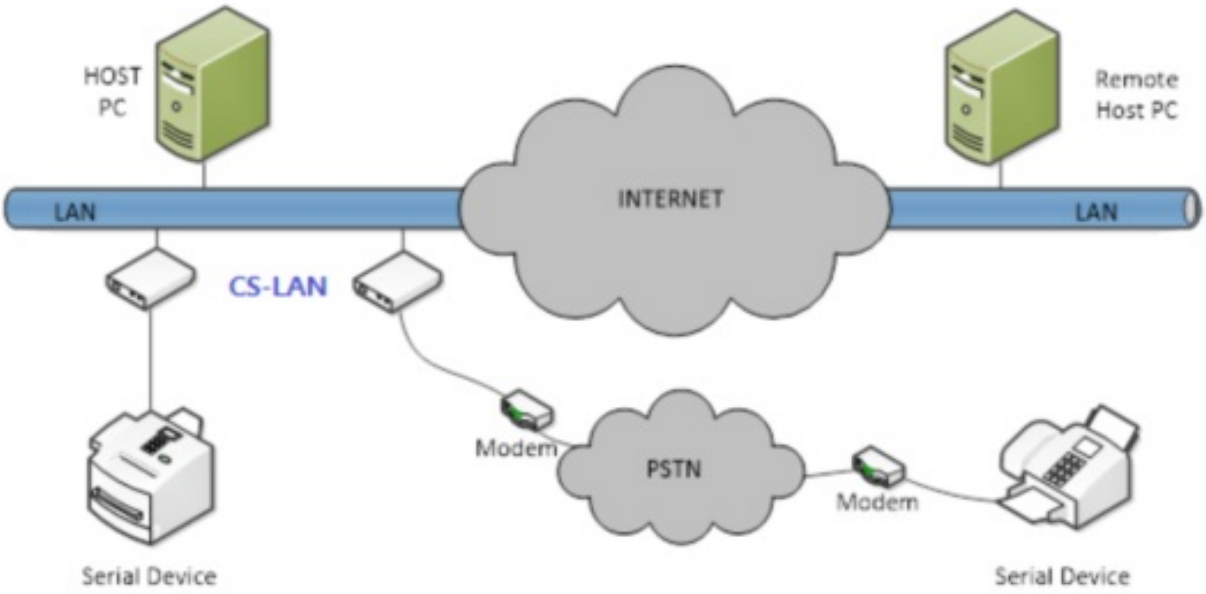
– Serial communication speed at the highest 921 Kbps
– RS-232 method
– 10/100 Mbps(Auto MDIX) Ethernet Port
– COM Port Redirector
– Web-based device settings
– SGConfig utility-based settings

Contents of Package

The CS-LAN package is composed as follows. Check if all components are included in the package.
CS-LAN device unit 1
5V DC Adaptor
Ethernet Cable
CS-LAN User Manual

Class A equipment

Sellers or users should be aware of the fact that this device is intended for industrial use(Class A), not for residential use.

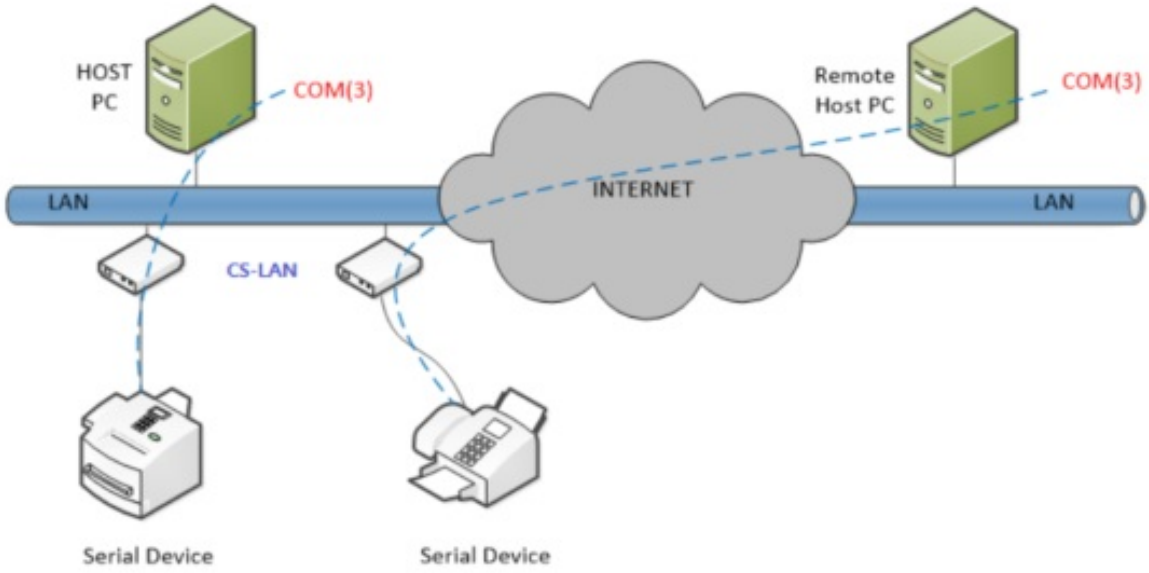


Serial Communication Tunneling

A serial cable connected between the PC and serial device is extended to the network so it can be used as a serial cable (without distance limits). In order to use this function, please refer to the serial settings in Chapter 5 Setting via Web to set at TCP Server – TCP Client or UDP Server – UDP Client mode. At these two modes, the data can be received and sent.

COM Port Redirection

Using a redirection to use the serial port of CS-LAN connected to the network as the serial port mounted on a PC.



Factory / Industrial Automation

PLC, Robot, Arm, Human-Machine Interface, Logistics storage rail Medical device, tester controller ”
Alarm
Home appliance / electronic device
Power managing device, game console
Measuring equipment, gas detector, and water level and contamination measuring equipment

Data collector and distributor
Finance / Building Automation
Card reader, barcode scanner, Kiosk, POS related equipment
Serial printer, cash withdrawal, credit card reader
Biometric sensor security equipment

Hardware Specifications

This chapter is intended to provide comprehensive information of hardware, including hardware composition of CSLAN, pin specification and other related matters.

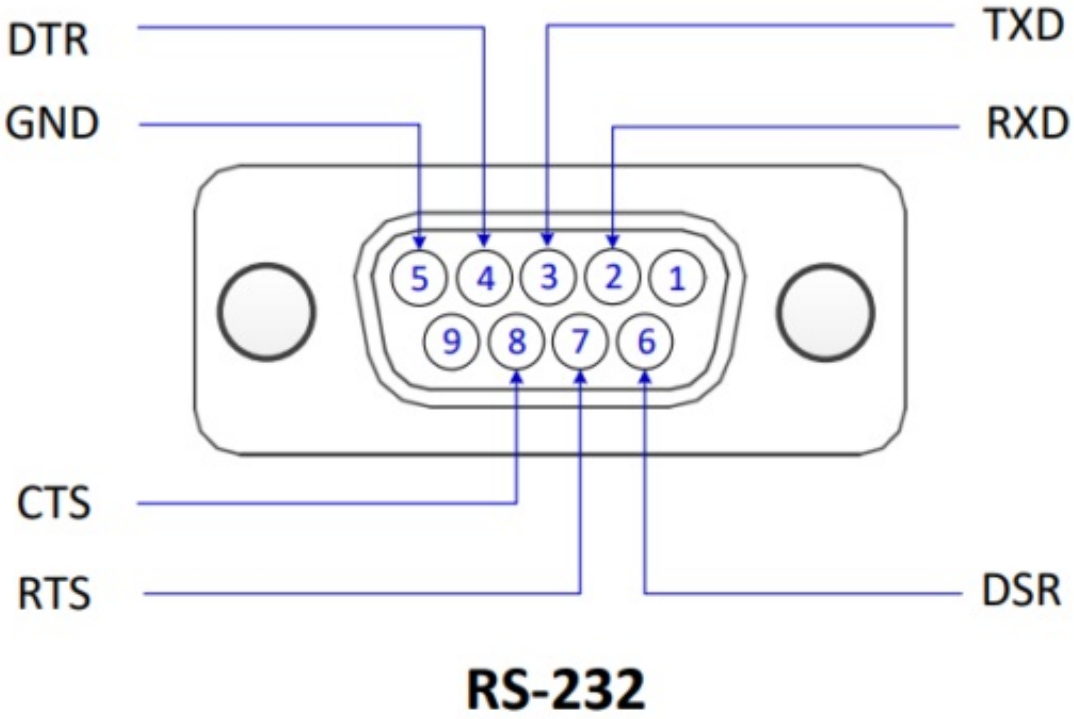
Hardware

- Serial Port: RS232(DE-9 FEMALE)
- Power Connector: To connect a DC 5V adaptor power cable via DC Adapter.
- Reset Button: Press and release a button to restart CS-LAN
- LED: Indicate the operation of CS-LAN. The next chapter provides each LED function from the LED states.
- LAN Port: This port (8-pin RJ45) is used in connecting CS-LAN with Ethernet card, hub, router, and other wire network connectors.

LED

	LED Name	State	Operation
1	RDY	Blink	The light is turned on for a short period if power is on and turned off at the completed booting.
2	TXD	Blink	Blinks at a green light if sending serial data.
3	RXD	Blink	Blinks at a red light if receiving the serial data

Serial Port Pin Specifications



RS-232

Pin No.	Signal	Description
2	RXD	Receive Data (Input)
3	TXD	Transmit Data (Output)
4	DTR	Data Terminal Ready (Output)
5	GND	Ground
6	DSR	Data Set Ready (input)
7	RTS	Request to Send (Output)
8	CTS	Clear to Send (Input)

* CS-LAN is a DCE (Data Communications Equipment) converter that is directly connected to DTE equipment such as PC.

Connecting Network

This chapter is intended to provide the required information to connect and operate CS-LAN with another serial device such as Ethernet, serial connection of CS-LAN.
How to connect CS-LAN with a device and network is as shown in the following.

Before Connecting

In order to connect a CS-LAN to the network, an RJ45 Ethernet port is required. Ethernet supports 10Mbps and 100Mbps Ethernet connection (automatic recognition of 10/100Mbps). A LAN port in CS-LAN supports an MDIX so that it automatically recognizes the Ethernet crossover cable and straight-through cable. Therefore, the type of cable connection is not a matter. The end of the cable is connected to CS-LAN and other network devices.

First-time Use

The users need to check if the input voltage is to be provided to CS-LAN to supply power correctly. CS-LAN is turned on and starts rebooting only when the power is properly supplied.
RDY LED or TXD/RDX LED can be used to check the operation status and please refer to the “Chapter 3 ‘composition of hardware” for more detailed information on LED states.

It requires an IP address in order to access the CS-LAN web. Basically, a static IP is given as the default setting in CS-LAN. After first access, enter other IP addresses manually or IP that is automatically assigned by the DHCP server. This depends on the user's network configuration and policy but it is strongly recommended to assign a static IP to CS-LAN.

Making Connection

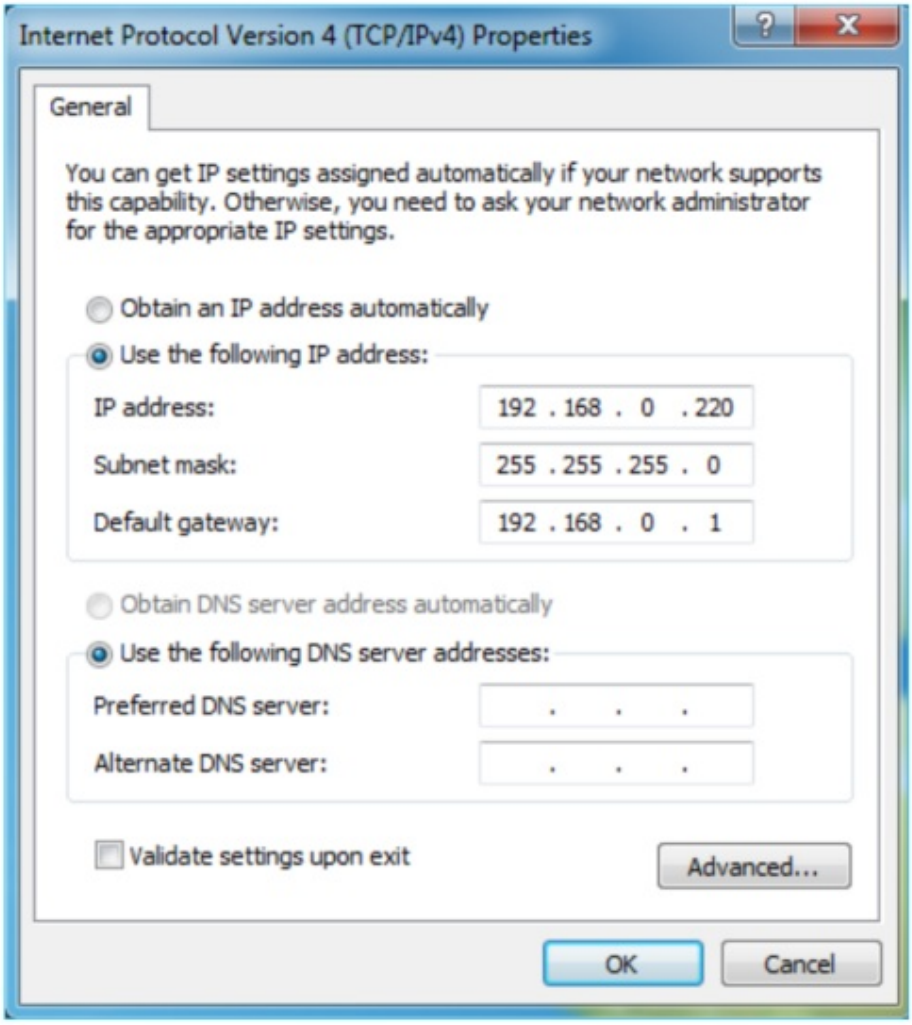
The users need to access a web browser or use a configuration utility in order to view or set the CS-LAN configurations. Please refer to the SGConfig manual for more detailed information on how to use the utilities. This manual is prepared based on the settings via web browser.

First, the users need to know the network address, IP Address where the CS-LAN is being operated.

If the LAN port of CS-LAN is used by IP assigned from DHCP or set on a fixed static ID address or unknown ID address, this manual provides how to access the CS-LAN as follows.

Default IP Address: 192.168.0.223

The default IP address of CS-LAN is set on 192.168.0.223. In order to access this IP address, the network settings should be changed. Please refer to the following for setting.



Setting via Web

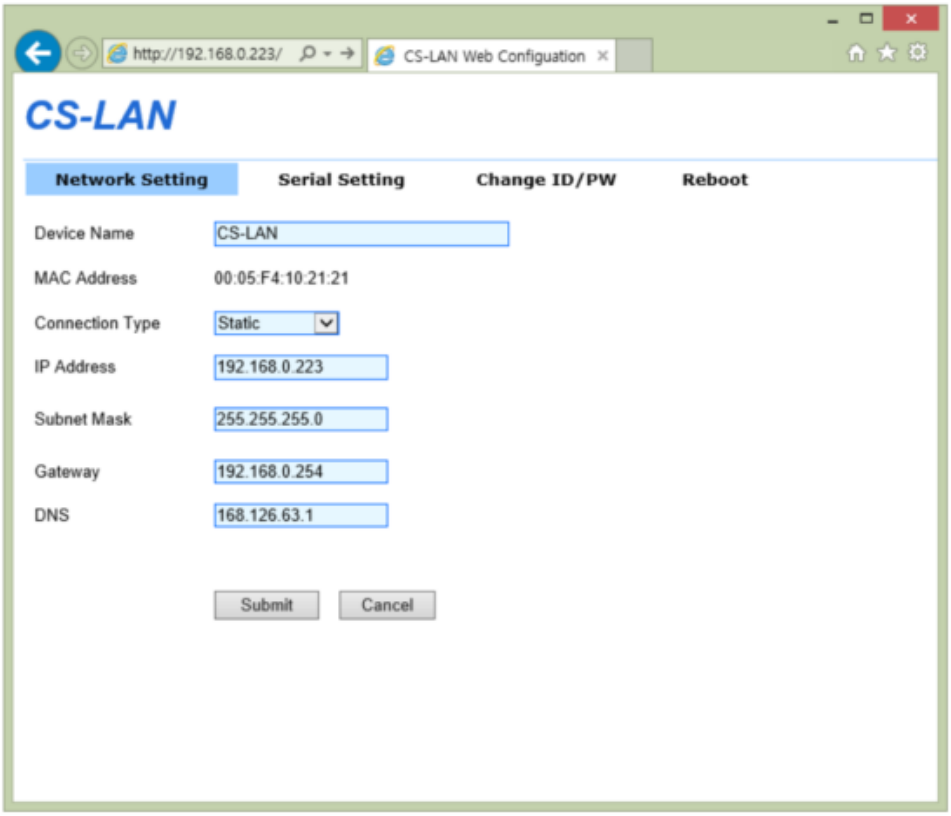
This chapter is intended to provide web settings for CS-LAN.

Access

Open a web browser and enter an IP address of CS-LAN to bring up the authentication window at the first access. Enter "clean" in ID and "99999999" in the password to bring up a web setting page.

Network Setting

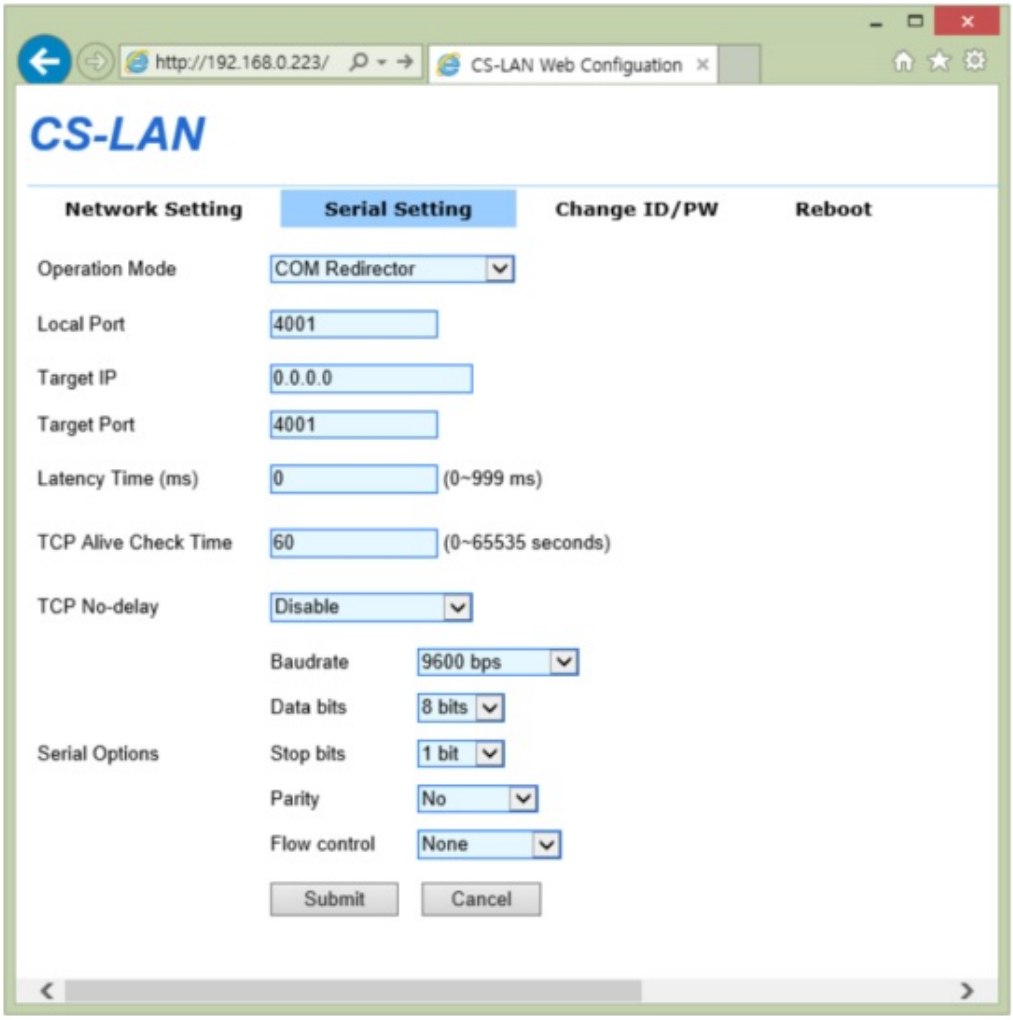
The first page displays the network setting for device network information. It is as shown in the following.



The network configurations and network management are set in the network setting. After changing the settings, press a [Submit] button to save the changes, and the system should be restarted via the reboot menu in order to apply the changes to the actual operation. If not saving the changes prior to exit, the changes will be lost.
If you have not saved the changes by pressing a [Submit] button, you can go back to the original before changes are applied by pressing a [Cancel] button.
The main functions of the Network Setting page are as follows.

Menu	Default	Description
Device Name	CS-LAN	To set the name of a device
MAC Address	Distinct Address	To show a MAC Address
Connection Type	Static	To select if static IP or dynamic IP assigned from DHCP is selected
IP Address	192.168.0.223	To set the current ID address If the connection type is a static IP, enter a direct IP address; if CHCP, t he current IP is assigned and unable to be changed.
Subnet Mask	255.255.255.0	To set the current subnet mask address (If the connection type is a static IP, enter the direct subnet mask addre ss. If the connection type is DHCP, the current subnet mask address is displayed but is not able to be changed.)
Gateway	192.168.0.254	To set the current gateway address (If the connection type is a static IP , enter the direct gateway address; if the connection type is DHCP, the current subnet mask address is displayed but is not able to be changed.)
DNS	168.126.63.1	To set the DNS (Domain Name Service) ID address

Serial Setting



The operation settings of the serial port are set at the serial settings. After changing the settings, press a [Submit] button to save the changes, and the system should be restarted via the reboot menu in order to apply the changes to the actual operation. If not saving the changes prior to exit, the changes will be lost.
If you have not saved the changes by pressing a [Submit] button, you can go back to the original settings by pressing a [Cancel] button
The current serial settings will be ignored at the COM Redirector mode and changed to settings at the connection to a virtual COM port.
In the COM Redirector mode, the current serial settings will be ignored, and changes to settings at the connection to the virtual COM port will be applied.
The key functions of the Setup Menu are as follows.

Menu	Default	Description

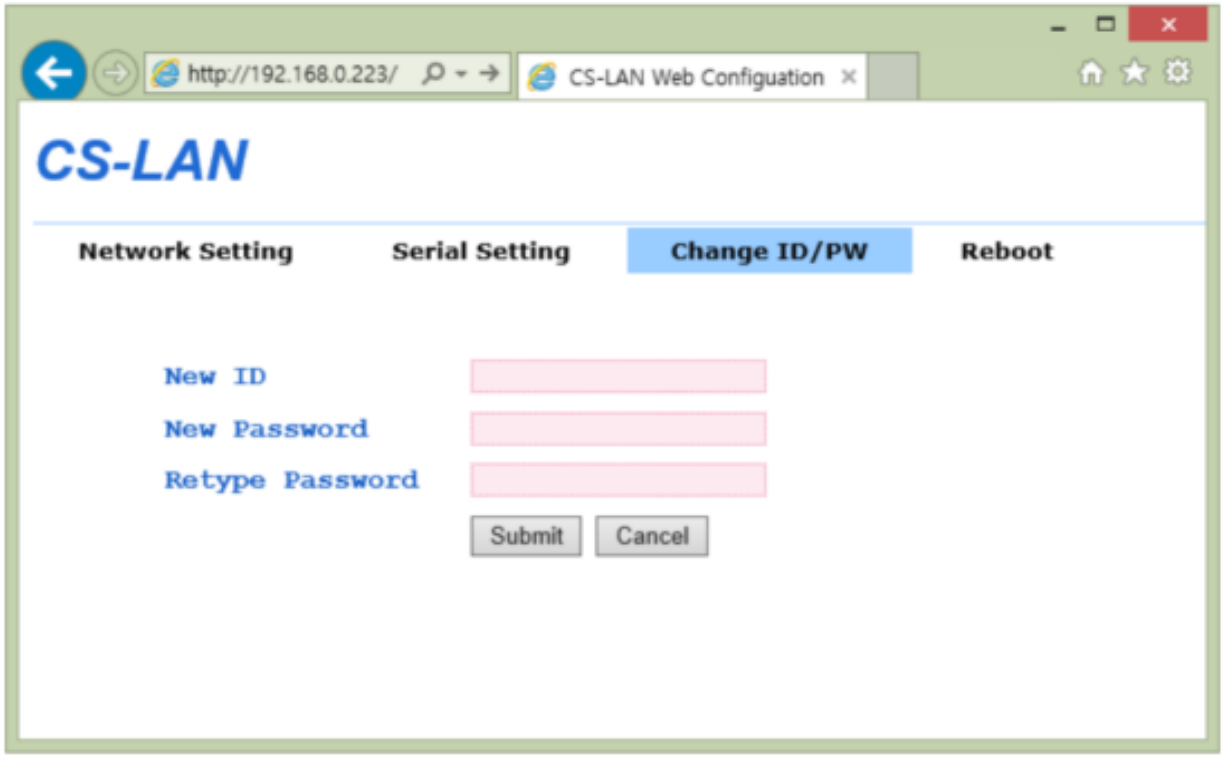
operation Mode	COM Redirector	To set the operating protocol to be used in the serial port. **COM Redirector** To enable serial port of CS-LAN at the Windows 2000/XP/2003/Vista/7/8.1 in the PC with as a virtual COM Port. If you select this mode, all settings of the serial will follow the virtual COM port. **TCP Server** CS-LAN plays a role as a socket server to standby for accessing clients on the network. The socket number is set at the [Local Port] and once the socket access is completed, the data generated between the socket and the serial port will be transferred as it is.**TCP Client** CS-LAN plays a role as a socket client when a specific server standby for accessing on the network. It attempts acceding with IP address and socket number of the server. Once socket access is completed, the data generated between the socket and the serial port will be transferred as it is. The OP and port number to be requested for access should be set at [Target IP/Port]. **UDP Server** CS-LAN plays a role as a UDP server to standby for UDP access from clients on the network. Socket number standbys for accessing is set the [Local Port].If a UDP package is received from the socket number, the data is to be sent to serial port data and the data input from the serial port is to be sent to the client in UDP package form. **UDP Client** Once the data is input at the serial port, the IP and socket number of the server is to send the UDP package. The IP and port number of the server requested for access are to be set at [Target IP/Port].
Local Port	4001	To assign the docket number assigned to a port. This port is used to standby for network socket connection at the TCP Server and UDP Server modes.
Target IP	0.0.0.0	To assign an IP address for the device to be connected at the TCP Client and UDP Client modes.
Target Port	4001	To assign a port to be connected at the TCP Client and UDP Client modes.

Latency Time	0	To send the data consecutively received from the serial port to the socket at once. For example, if 100-byte text is sent from the serial device and then to a socket in the server via CS-LAN, the data being input by several byte units is immediately sent to a server through a socket if the value is 0, assuring a real temporality. However, the disadvantage is to cause potential traffic on the network due to numerous packets being sent to the server.If this value is set at other than 0, the data being received at several bytes at

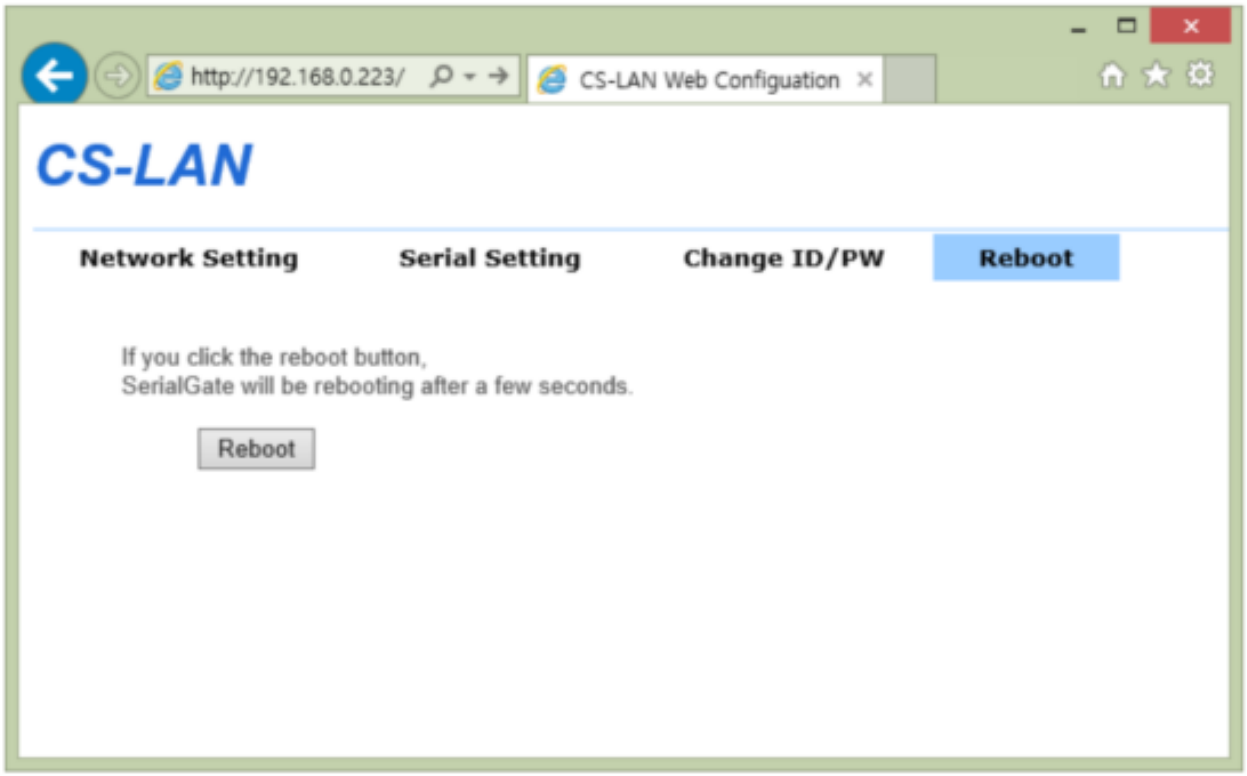
Menu	Default	Description
		once is to be buffered and stood by at the set time prior to rereading. If there's new data received, it will fill the buffer again but if not, all received data will be sent to a socket at once; therefore, no traffic issue is caused but is not to assure its real temporality. (Setting range: 0 ~ 255)
Baud Rate	9600 bps	To set the communication of serial port. (Option: 150, 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400, 460800, 921600 bps)
Data Bits	8	To set the number of bit composing a byte.(Option: 5, 6,7,8)
Stop Bits	1	To set the number of stop bits. (Option: 1, 2)
Parity	No	To set a parity check.(Option: No, Odd, Even)
FlowControl	None	To set the flow control (Option: None, RTS/CTS)

Change ID/PW

The ID and password are required to access the web setting page. This ID and password can be changed by the user in the following screen. Please be aware that this setting is saved and applied at the same time without rebooting.

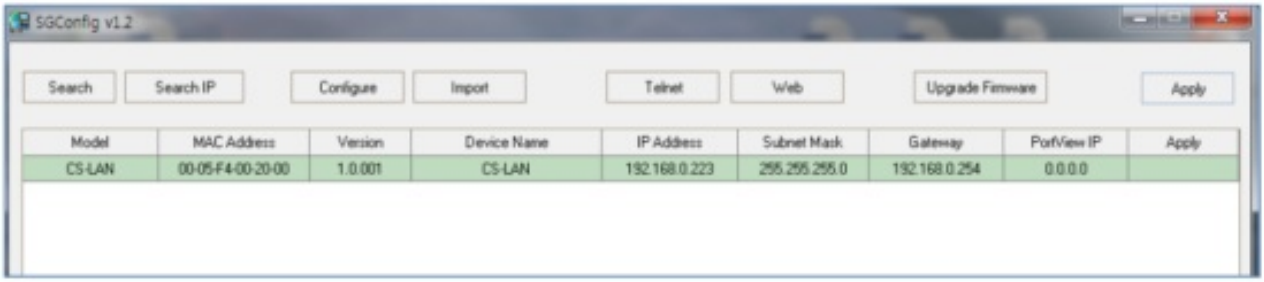


Reboot
A device is restarted.
If you change the settings and save them via a submit button. The CS-LAN is restarted with the changes.



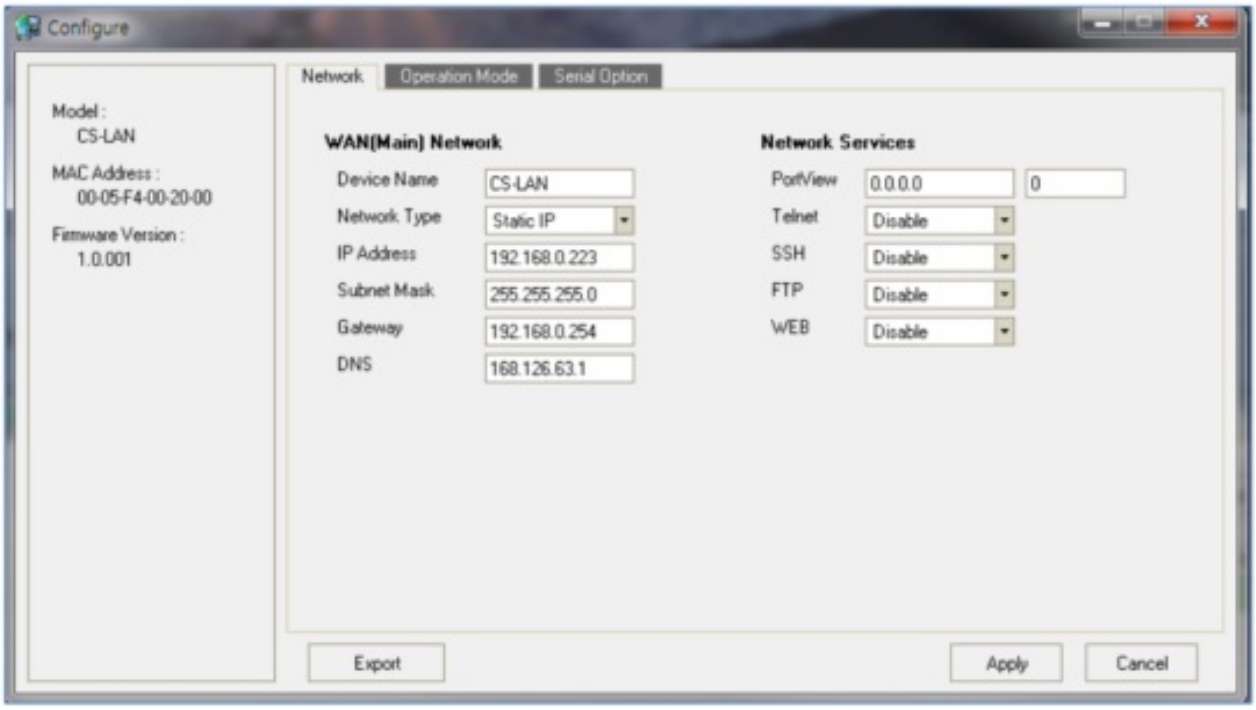
Utility-based Setting

This chapter is intended to provide a CS-LAN setting using the SGConfig utilities.
Search
Execute an SGConfig and search, it will search the CS-LAN connected to the network.



Settings

Select a list of devices for setting among the searched devices and click a configure button to bring a CS-LAN setting window as shown in the follows. Please refer to SGConfig manual for more detailed information on option and setting.



Appendix

Trouble Shootings

This chapter is intended to provide solutions to various problems may be caused while using this device. It covers the problems in the following category.

Installation

It is recommended to check the network connection and cable first if not able to access the connected device via CSLAN.

- Check if all connections are properly made. (Ethernet or DE-9 connector, serial cable)
- Check if the ID address and port number are properly entered.
- Connect CS-LAN with other ports to check if the port is properly operated if using a Hub.

Network Settings

- Check if the computer and CS-LAN are on the same network if TCP/IP is used. (Check the connection with CSLAN via a ping command on the computer). IP address of

  CS-LAN is found on the logical network same as the host computer. For example, If the computer's ID address is 192.189.207.3 and the subnet mask is set at 255.255.255.0; then the IP address of CS-LAN should be set at

192.189.207.x (x should be an integral number from 1 to 254). Also, check if the default gateway address is also properly set.

- If IP address in CS-LAN is set to be automatically assigned via DHCP, the IP address of CS-LAN can be changed. Obtain a permanent IP address from the DHCP server and set it in CS-LAN or assign a static IP address in the CS-LAN to fix the address.
- Problems may be caused attributed to an incorrect or repeated IP addresses. Check if IP address is correctly assigned to CS-LAN and if that IP is assigned to other equipment on the network. The IP collision issue in the CTP/IP connection is very frequent and common. If IP address is not correctly set, it would be highly likely to be caused by the device connection.
- Check if both computer and CS0LAN use the same subnet mask. (For example, if CS-LAN uses a subnet mask of 255.255.255.0, the same subnet mask should be used in the computer as well). Also, check if the default gateway is correctly set or not.
- If an incorrect IP address is assigned, find a DHCP server to check if an incorrect address is assigned to CS-LAN.

Window O/S

- If the device is not properly connected to window O/S, check the connection via the PING x.x.x.x (x.x.x.x is an IP address of CS-LAN) command at the command prompt. If the ping is not properly working, access to serial equipment is not possible.
- If trouble is caused while using a COM redirect (emulator), check if the correct virtual port is used while executing the application. Check if the COM port assigns a correct COM port in the application.

Specifications

Ethernet	LAN Port	1 Port 10/100Mbps RJ-45 Port
	Network Connection	Static IP, Dynamic IP
Serial	Serial Port	1 Port DE-9 RS232 DCE
	Speed	Max. 921.6Kbps
	Data bit	5, 6, 7, 8
	Stop bit	1, 2
	Parity bit	None, Even, Odd
	Flow Control	RTS/CTS

	Signals	TXD, RXD, DTR, DSR, CTS, RTS
Hardware	Power	5V DC Input, Consumption power: 1.2W
	Dimension (W x L x H)	46 x 77.5 x 25mm 1.81 x 3.05 x 0.98in
	Weight	32.1g (1.13oz)
	Operating Temperature	-40ºC ~ 85ºC (-40 ~ 185ºF)
	Humidity	Max. 90% R.H.
	LED	RDY(Yellow), TXD(Green), RXD(Red)
	Serial Port Protection	±15kV ESD Protection
Software	Protocol	TCP, UDP, ICMP, DHCP, HTTP
	Utility	Redirector, TestView, SGConfig
	Configuration	Web, SGConfig
Ordering Information		CS-LAN

***Reset Button**

Function	Operation	Result
Warm Booting	Press less than 3 seconds	CS-LAN is restarted.
Factory Default	Press more than 3 seconds	Cs-LAN settings are reset

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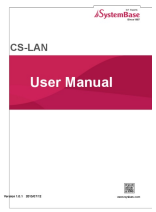	SystemBase A3E1E819 CS-Lan Converter [pdf] User Manual A3E1E819 CS-Lan Converter, A3E1E819, CS-Lan Converter

References

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