MultiPort PCI English Hardware Manual

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Greetings from CEO

We appreciate all the customers for their deep interest in our products.

SystemBase has been engaged wholly in the field of the serial communications to produce the various products related to the same since it was founded in 1987.

Along with the recent booming market trend by the advanced skill of high speed communication applying LAN the applicable field of this serial communications could not draw the attention of the public. Consequently the customers of the serial communications have faced the difficulty of very poor technical support from the supplier in spite of its wide use before then.

But the customers of SystemBase are not needed to worry about such inconveniences since the technical discussions with customers for the application of our products as well as the efficient After-Service work have been kept effectively so far and will also be kept continuously in future by the technical staffs our company who have enough experiences and skills to perfect customers from such inconveniences.

Once again we appreciate all of our customers who have loved our products during the past years.



About MultiPort

MultiPort is a multi serial communication device which makes PC to a multi-user or Multi device system by applying it. Multi-user system or RAS(Remote Access System) is a system which enables a server computer to be used together by multi users thru the terminal at distance or to have the information used together.

All the users can access to the server thru the MultiPort equipped on the server at distance and can use the device connected to the network as if it is his own one, or can access to the file server as if he is on the LAN. In many cases only one computer is used simultaneously by multi staff in the company due to the function and economic reason. What makes it possible is the multi communication access device which connects the operating system with multi user function and multi users. The typical ones are LAN and the asynchronous serial communication port. Of these the device which connects the host and multi users locating at distance by using asynchronous communication port is the MultiPort.

The multi device system is mainly used for the automation system, and it collects and distributes the data at real time created from each device, or control various devices at distance by a computer installed at center with several asynchronous devices connected. In other words the user at center can work at the real time by catching the present status of all devices located at distance, or controlling the movement of them thru the MultiPort of the computer at center.

The merit of MultiPort is easy and economic to install and maintain.

Meantime LAN has high speed to transmit data, but the more devices connected and users are involved the more crashes among the transmitted data happens. Once such crashes happens far more times than some level then the transmitting efficiency is declined suddenly. But it is possible to realize Read Time without any distance limitation by applying MultiPort because it is 1:1 communication and transmitting capacity can be kept constantly even if several dozens of port were connected.

At the same time the speed of asynchronous communication is being improved along with the advanced technique of hardware day by day, so not necessary to worry about the communication speed.

There are 2 types of MultiPort-Dummy and Intelligent. Dummy MultiPort is the one which has no processor by itself. It is better in economical viewpoint than Intelligent one in case of smaller volume in transmitting data and fewer number of port connected to system. Usually it is more efficient to use Dummy MultiPort when the number of port is not exceeding 32. Meantime Intelligent MultiPort is rather efficient when required to transmit large volume of data due to its fast processing speed as it has processor by itself. Furthermore it is possible to connect several hundreds port to a system, but costs high.



About PCI

PCI(Peripheral Component Interconnect) is a type of local bus that connects CPUs and internal peripherals. In 1991, PCI was proposed by Intel Corporation for the first time, but now it is a local bus standard so that PCs, and even medium and large computer systems can adopt it. A few features of PCI bus can be summarized as follows.

The PCI is basically designed to operate at 33 MHz clock speed and 32 bit I/O. It also has an extended 66 MHz, 64 bit I/O that accommodates Baud rates 8 times faster than the conventional ISA bus type (8 MHz, 16 bit I/O).

Peripherals connected to the PCI bus have their own register and device information used for setting hardware automatically. This enables users to install PCI devices with ease.

The CPU works separately from the bus master, so that the PCI bus continues to perform its functions without waiting for the CPU even though the peripherals connected though the bus are slow. This structure helps PCI handle much more loads at the same time.

The PCI bus has multiplexed card pins that contribute to reduce component size, making them smaller than ISA cards and further lowering hardware costs.

PCI bus components are completely compatible with existing device drivers and applications. That is, they only require PCI in order to control the devices and show perfect compatibility with previously installed programs.

The PCI bus makes its surface reversely located from that of the ISA card so that it can utilize a shared slot (using the identical guide between different bus types).

The PCI bus is the most effective supporting type for 64-bit CPU. As it has the advantage on being compatible with the existing ISA bus, it is expected to be a standard bus type for all computers in the future.



Isolation

• What is Isolation?

ISO version boards and panels include an embedded isolator to provide isolation feature. Isolator cuts off the electric route between the input and output by inserting an appropriate shock absorber. This feature protects the device from the power crash.

Product Features

Securely protects the product from electric shock with opto coupler and DC-DC converter that electrically isolate the power and signal lines. PC internal signal and RS422, RS485 signal: 10kV Opto Isolated. PC internal power and RS422, RS485 power: 3kV Isolated.

Applied Products
Panel: Panel4 DB4 ISO 422/485 Ver A1
Board: Multi-2 ISO/PCI



Synopsis

- SystemBase MultiPort PCI boards are installed on a PCI slot of your PC, providing 1, 2,4,8,16,24 or 32 RS 232/RS422/RSs485 serial ports.
- Multi-1/PCI, Multi-2/PCI, Multi-4/PCI, Multi-8/PCI MultiPort boards provide one, two, four and eight serial ports respectively.
- Multi-32/PCI MultiPort board is composed of 8, 16, 24, 32 ports with the extended external port box, Each port complies with standard UART for both-way communication at up to 921,600 bps.
- MultiPort PCI board occupies one interrupt number (IRQ) and many I/O addresses.
- MultiPort PCI board has automatic setting functions that eliminate the inconvenience of manually setting I/O base addresses and IRQ numbers.
- Each PC has up to four multiPort PCI boards and amounts to up to 128 ports.
- In Multi user environments such as SCO UNIX, Linux and Windows 2000/NT/XP/2003/Vista MultiPort PCI boards operate in multi-user mode connecting several terminals to one PC through multiplexed asynchronous serial communications.
- In singular user environments such as windows 98 and MS-DOS, MultiPort PCI boards operate in multi-device mode connecting several devices to one PC through multiplexed asynchronous serial communications.
- The MultiPort board includes
 - 1. MultiPort controller board.
 - 2. External port box(however, it is excluded from
 - 3. Multi-1, 2, 4J, 8C, 16C).
 - 4. Controller cable(however, it is excluded from Multi-1,2).
 - 5. CD with driver manual.



Multi-1/PCI VA1

Multi-1/PCI VA1 board is a model that supports PCI Local Bus Spec 2.3. It is an asynchronous single port product designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-1/PCI uses core for PCI Local Bus Spec 2.3 designed by SystemBase. Multi-1/PCI VA1 not only supports maximum communication speed of 921.6Kbps but also provides advanced ability to automatically control IO signals when it is used with driver provided by SystemBase. Furthermore, it is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information controller and etc. Also, LED is attached outside to show the current status of signal lines.

- Product Specifications

Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485
Communication Controller	SB4002A
Connector	DB9 (Male)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- RS232 Model

1.9 Pin Connector (Male)



2. Connecting Terminal



3. Connecting Modem





- RS422 Model

1.9 Pin Connector (Male)



2. Mode Change

Select between point-to-point mode and multi-drop mode during the installation of the device driver. The default mode is point-to-point mode.

3. Connecting External Point-to-Point



4. Connecting Multi-Drop





- RS485 Model

1.9 Pin Connector (Male)



2. Mode Change

Select between non-echo mode and echo mode during the installation of the device driver. The default mode is non-echo mode.

3. Connection



- RT: 120 Ohm (If there is no serious noise, termination resistors are not required)
- RS485, like LAN, adopts a half duplex bus where the host is not divided from terminals



Multi-1 ALL/PCI

Multi-1 ALL/PCI board is a model that supports PCI Local Bus Spec 2.3. It is designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-1 ALL/PCI uses core for PCI Local Bus Spec 2.3 designed by SystemBase. Multi-1 ALL/PCI not only supports maximum communication speed of 921.6Kbps but also provides different communication interfaces, RS232/RS422/RS485, with simple jumper setting. Furthermore, it is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information such as number of ports currently installed, maximum communication speed, kind of communication controller and etc.

- Product Specifications

_	
Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485
Communication Controller	16C550
Connector	DB9 (Male)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- RS232 Model

1. RS232 Connector Pin-outs

9 Pin Connector (Male)



5V, 12V Power can be supplied through 9-pin connector, using the board jumper setting

2. RS232 Jumper Configuration





3. Connecting Terminal



4. Connecting Modem





- RS422 Model

1.9 Pin Connector (Male)



2. RS422 Jumper Configuration



3. Mode Change

When installing the device driver, select either point-to-point mode or multi-drop mode by software. The default is point-to-point mode.

4. RS422 Point to Point Connection









- RS485 Model

1. 9 Pin Connector (Male)



2. RS485 Jumper Configuration



3. Mode Change

When installing the device driver, select either non-echo mode or echo mode by software. The default is non-echo mode.



4. RS485 Connection



5. Terminal Resistance Setting



- JP4: RS 485 Communication Terminal Resistance
- JP5: RS 422 Communication Terminal Resistance
- Terminal resistance only connects to terminal channels in RS422 or RS485.
- Multi-1 All/PCI can independently connect to the terminal resistance, using the Jumper Switch
- Jumper for the matching channel should be connected when the connection of the terminal resistance is desired.



Multi-1/LPCI VA2

Multi-1/LPCI VA2 board is a model that supports PCI Local Bus Spec 2.3. It is an asynchronous single port product designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-1/LPCI VA2uses core for PCI Local Bus Spec 2.3 designed by SystemBase. Multi-1/LPCI VA2 not only supports maximum communication speed of 921.6Kbps but also provides advanced ability to automatically control IO signals when it is used with driver provided by SystemBase. Furthermore, it is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information controller and etc.

- Product Specifications

Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485
Communication Controller	SB16C552
Connector	DB9 (Male)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	15kV Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- RS232, Combo Common

1. Port1: External Power Supply Setting Jumper



- RI: Do not supply external power and use pin 9 for RI signal line.
- +5V: Use pin 9 for supplying +5V external power.
- +12V: Use pin 9 for supplying +12V external power.



 In case you want to supply +5V power but the PCI slot does not supply it, you should use PC's power supply.



- RS232 Model

1.9 Pin Connector (Male)



2. Connecting Terminal



3. Connecting Modem





- RS422/RS485 Combo Model

Combo refers to products that can alternatively use RS422 or RS485 using jumper settings





2. Jumper Settings

a. Interface Settings: Interface Selection



- 422: Select RS422 Interface
- 485: Select RS485 Interface

b. Port1 RT: RS422/RS485 Terminal Resistance Selection



- 422: Set RS422 Terminal Resistor
- 485: Set RS485 Terminal Resistor
- None: Do not set Terminal Resistor



c. Slew: Slew Rate Limit Ability



- 10M: Not use Slew Rate Limit ability. Maximum communication speed 921.6Kbps in this mode.
- 250K: Use Slew Rate Limit ability. Communication speed is limited under 250Kbps.
- Slew Rate Limit reduces reflected waves emitting from ends of communication cables and speeds up slew-rate driver that restrains EMP electromagnetic waves thereby enabling communication with no data errors. But communication speed is limited in this mode.

3. RS422 Point-to-Point Connection



4. RS422 Multi-Drop Connection





5. RS485 Connection



- RT: 120 Ohm (Not necessary when there is not much noise)
- RS485, like LAN, uses Half Duplex Bus and has no classification between host and terminal



Multi-1/LPCI VA3

Multi-1/LPCI VA3 board is a model that supports PCI Local Bus Spec 2.3. It is an asynchronous single port product designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-1/LPCI VA3 uses SB16C1050 core designed by SystemBase. Multi-1/LPCI VA3 not only supports maximum communication speed of 921.6Kbps but also provides advanced ability of HW Auto Flow control and 256byte FIFO. Furthermore, it is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information such as number of ports currently installed, maximum communication speed, kind of communication controller and etc.

- Product Specifications

Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485
Communication Controller	SB16C1052PCI
Connector	DB9 (Male)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	15kV Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- RS232, Combo Common

Combo refers to products that can alternatively use RS422 or RS485 using jumper settings

1. Port1: External Power Supply Setting Jumper



- RI: Do not supply external power and use pin 9 for RI signal line.
- +5V: Use pin 9 for supplying +5V external power.
- +12V: Use pin 9 for supplying +12V external power.



• In case you want to supply +5V power but the PCI slot does not supply it, you should use PC's power supply.



- RS232 Model

1.9 Pin Connector (Male)



2. Connecting Terminal



3. Connecting Modem





- RS422/RS485 Combo Model

Combo refers to products that can alternatively use RS422 or RS485 using jumper settings



2. Jumper Settings

a. Interface Settings: Interface Selection



- 422: Select RS422 Interface
- 485: Select RS485 Interface

b. Port1 RT: RS422/RS485 Terminal Resistance Selection



- 422: Set RS422 Terminal Resistor
- 485: Set RS485 Terminal Resistor
- None: Do not set Terminal Resistor



c. Slew: Slew Rate Limit Ability



- 10M: Not use Slew Rate Limit ability. Maximum communication speed 921.6Kbps in this mode.
- 250K: Use Slew Rate Limit ability. Communication speed is limited under 250Kbps.
- Slew Rate Limit reduces reflected waves emitting from ends of communication cables and speeds up slew-rate driver that restrains EMP electromagnetic waves thereby enabling communication with no data errors. But communication speed is limited in this mode.

3. RS422 Point-to-Point Connection



4. RS422 Multi-Drop Connection





5. RS485 Connection



- RT: 120 Ohm (Not necessary when there is not much noise)
- RS485, like LAN, uses Half Duplex Bus and has no classification between host and terminal



Multi-2/PCI VA1

Multi-2/PCI VA1 board is a model that supports PCI Local Bus Spec 2.3. It is a asynchronous 2 port product designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-2/PCI VA1 uses core for PCI Local Bus Spec 2.3 designed by SystemBase. Multi-2/PCI VA1 not only supports maximum communication speed of 921.6Kbps but also provides advanced ability to automatically control IO signals when it is used with driver provided by SystemBase. Furthermore, it is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information such as number of ports currently installed, maximum communication speed, kind of communication controller and etc.

- Product Specifications

_	
Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485
Communication Controller	SB4002A
Connector	DB9 (Male)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	15kV Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- RS232 Model

1. 9 Pin Connector (Male)



2. Connecting Terminal



3. Connecting Modem




- RS422 Model

1.9 Pin Connector (Male)



2. Mode Change

Select between point-to-point mode and multi-drop mode during the installation of the device driver. The default mode is point-to-point mode.

3. Connecting External Point-to-Point



4. Connecting Multi-Drop





- RS485 Model

1.9 Pin Connector (Male)



2. Mode Change

Select between non-echo mode and echo mode during the installation of the device driver. The default mode is non-echo mode.

3. Connection



- RT: 120 Ohm (If there is no serious noise, termination resistors are not required)
- RS485, like LAN, adopts a half-duplex bus where the host is not divided from terminals



Multi-2/PCI VA2

Multi-2/PCI VA2 board is a model that supports PCI Local Bus Spec 2.3. It is an asynchronous 2 port product designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-2/PCI VA2 uses core for PCI Local Bus Spec 2.3 designed by SystemBase. Multi-2/PCI VA2 not only supports maximum communication speed of 921.6Kbps but also provides advanced ability to automatically control IO signals when it is used with driver provided by SystemBase. Furthermore, it is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information such as number of ports currently installed, maximum communication speed, kind of communication controller and etc.

- Product Specifications

Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485
Communication Controller	SB16C552
Connector	DB9 (Male)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	15kV Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- RS232 Model

1.9 Pin Connector (Male)



2. Connecting Terminal



3. Connecting Modem





- RS422/RS485 Combo Model

Combo refers to products that can alternatively use RS422 or RS485 using jumper settings.





2. Jumper Settings

a. Interface Settings: Interface Selection



- 422: Select RS422 Interface
- 485: Select RS485 Interface



b. Port1 RT: RS422/RS485 Terminal Resistance Selection

- 422: Set RS422 Terminal Resistor
- 485: Set RS485 Terminal Resistor
- None: Do not set Terminal Resistor



c. Slew: Slew Rate Limit Ability



- 10M: Not use Slew Rate Limit ability. Maximum communication speed 921.6Kbps in this mode.
- 250K: Use Slew Rate Limit ability. Communication speed is limited under 250Kbps.
- Slew Rate Limit reduces reflected waves emitting from ends of communication cables and speeds up slew-rate driver that restrains EMP electromagnetic waves thereby enabling communication with no data errors. But communication speed is limited in this mode.



Multi-2/PCI VA3

Multi-2/PCI VA3 board is a model that supports PCI Local Bus Spec 2.3. It is an asynchronous single port product designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-2/PCI VA3 uses SB16C1050 core designed by SystemBase. Multi-2/PCI VA3 not only supports maximum communication speed of 921.6Kbps but also provides advanced ability of HW Auto Flow control and 256byte FIFO. Furthermore, it is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information such as number of ports currently installed, maximum communication speed, kind of communication controller and etc.

- Product Specifications

Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485
Communication Controller	16C1052PCI
Connector	DB9 (Male)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	15kV Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- RS232 Model

1.9 Pin Connector (Male)



2. Connecting Terminal



3. Connecting Modem





- RS422/RS485 Combo Model

Combo refers to products that can alternatively use RS422 or RS485 using jumper settings.





2. Jumper Settings

a. Interface Settings: Interface Selection



- 422: Select RS422 Interface
- 485: Select RS485 Interface



b. Port1 RT: RS422/RS485 Terminal Resistance Selection

- 422: Set RS422 Terminal Resistor
- 485: Set RS485 Terminal Resistor
- None: Do not set Terminal Resistor



c. Slew: Slew Rate Limit Ability



- 10M: Not use Slew Rate Limit ability. Maximum communication speed 921.6Kbps in this mode.
- 250K: Use Slew Rate Limit ability. Communication speed is limited under 250Kbps.

Slew Rate Limit reduces reflected waves emitting from ends of communication cables and speeds up slew-rate driver that restrains EMP electromagnetic waves thereby enabling communication with no data errors. But communication speed is limited in this mode



Multi-2C/LPCI VA2

Multi-2C/LPCI VA2 board is a model that supports PCI Local Bus Spec 2.3. It is an asynchronous 2 port product designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-2C/LPCI VA2 uses core for PCI Local Bus Spec 2.3 designed by SystemBase. Multi-2C/LPCI VA2 board provides RS232 line interface and maximum communication speed of 921.6Kbps. In addition, it provides 2 DB9 Male connector cable that can be connected to DB25 pin connector for external connection. It is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information such as number of ports currently installed, maximum communication speed, kind of communication controller and etc.

- Product Specifications

Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485
Communication Controller	SB4002A
Connector	DB9 (Male)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	15kV Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- RS232 Model

1.9 Pin Connector (Male)



2. Connecting Terminal



3. Connecting Modem







4. Portx: External Power Supply Setting Jumper

- RI: Do not supply external power and use pin 9 for RI signal line.
- +5V: Use pin 9 for supplying +5V external power.
- +12V: Use pin 9 for supplying +12V external power.



• In case you want to supply +5V power but the PCI slot does not supply it, you should use PC's power supply.



Multi-2C/LPCI VA3

Multi-2C/LPCI VA3 board is a model that supports PCI Local Bus Spec 2.3. It is an asynchronous 2 port product designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-2C/LPCI VA3 uses core for PCI Local Bus Spec 2.3 designed by SystemBase. Multi-2C/LPCI VA3 board provides RS232 line interface and maximum communication speed of 921.6Kbps. In addition, it provides 2 DB9 Male connector cable that can be connected to DB25 pin connector for external connection and advanced ability of HW Auto Flow control and 256byte FIFO. It is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information such as number of ports currently installed, maximum communication speed, kind of communication controller and etc.

- Product Specifications

Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485
Communication Controller	16C1052PCI
Connector	DB9 (Male)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	15kV Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- RS232 Model

1.9 Pin Connector (Male)



2. Connecting Terminal



3. Connecting Modem







4. Portx: External Power Supply Setting Jumper

- RI: Do not supply external power and use pin 9 for RI signal line.
- +5V: Use pin 9 for supplying +5V external power.
- +12V: Use pin 9 for supplying +12V external power.



• In case you want to supply +5V power but the PCI slot does not supply it, you should use PC's power supply.



- RS422/RS485 Combo Model

Combo refers to products that can alternatively use RS422 or RS485 using jumper settings.

1. DB9 Female Connector (Male)



2. Jumper Setting

a. Interface Settings: Interface Selection





422: Select RS422 Interface



485: Select RS485 Interface





b. Port1 RT: RS422/RS485 Terminal Resistance Selection



c. Slew: Slew Rate Limit Ability





10M: Not use Slew Rate Limit ability. Maximum communication speed 921.6Kbps in this mode.



250K: Use Slew Rate Limit ability. Communication speed is limited under 250Kbps.

Slew Rate Limit reduces reflected waves emitting from ends of communication cables and speeds up slew-rate driver that restrains EMP electromagnetic waves thereby enabling communication with no data errors. But communication speed is limited in this mode

3. RS422 Point-to-Point Connection







5. RS485 Connection



- RT: 120 Ohm (Not necessary when there is not much noise)
- RS485, like LAN, uses Half Duplex Bus and has no classification between host and terminal



Multi-4/LPCI VA1

Multi-4/PCI VA1 board is a model that supports PCI Local Bus Spec 2.3. It is an asynchronous 4 port product designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-4/PCI VA1uses core for PCI Local Bus Spec 2.3 designed by SystemBase. Multi-4/LPCI VA1 not only supports maximum communication speed of 921.6Kbps but also provides advanced ability to automatically control IO signals when it is used with driver provided by SystemBase. It is used by connecting external port box with control board with Female DB9. Furthermore, it is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information such as number of ports currently installed, maximum communication speed, kind of communication controller and etc.

- Product Specifications

Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485
Communication Controller	SB16C554
Connector	DB9 (Female)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- RS232 Model

1. 25 Pin Connector (Female)



2. Connecting Terminal



3. Connecting Modem





- RS422 Model

1. 25 Pin Connector (Female)



2. Mode Change

Select between point-to-point mode and multi-drop mode during the installation of the device driver. The default is point-to-point.

3. Connecting External point-to-point



4. Connecting multi-drop





-RS485 Model

1. 25Pin Connector (Female)



2. Mode Change

Select between non-echo mode and echo mode during the installation of the device driver. The default is non-echo mode.

3. Connection



- RT: 120 ohm (If there is no serious noise, termination resistors are not required)
- RS485, like LAN, adopts a half duplex bus where the host is not divided from terminals.



Multi-4/LPCI VA2

Multi-4/LPCI VA2 board is a model that supports PCI Local Bus Spec 2.3. It is designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-4/LPCI VA2 uses core for PCI Local Bus Spec 2.3 designed by SystemBase. Multi-4/LPCI VA2 is used with Panel-4 VA2 panel. It not only supports maximum communication speed of 921.6Kbps but also provides advanced ability to automatically control IO signals when it is used with driver provided by SystemBase. Furthermore, it is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information controller and etc.

- Product Specifications

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Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485
Communication Controller	SB16C554
Connector	DB9 (Male)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	15kV Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- RS232 Model

1. 25 Pin Connector (Male)



2. Connecting Terminal



3. Connecting Modem





- RS422/RS485 Combo Model

Combo refers to products that can alternatively use RS422 or RS485 using jumper settings.



2. Panel Switch Settings

Selects RS422, RS485 line interface and mode



1	2	Interface	Mode
OFF	OFF	RS422	Point-to-Point
OFF	ON	RS422	Multi-Drop
ON	OFF	RS485	Non-Echo
ON	ON	RS485	Echo

3. Jumper Settings

a. Portx RT: RS422/RS485 Terminal Resistance Selection

(Port 1 is Port #1, Port2 is Port#2)



- 422: Set RS422 Terminal Resistor
- 485: Set RS485 Terminal Resistor
- None: Do not set Terminal Resistor

b. Slew: Slew Rate Limit Ability



- 10M: Not use Slew Rate Limit ability. Maximum communication speed 921.6Kbps in this mode.
- 250K: Use Slew Rate Limit ability. Communication speed is limited under 250Kbps.

Slew Rate Limit reduces reflected waves emitting from ends of communication cables and speeds up slew-rate driver that restrains EMP electromagnetic waves thereby enabling communication with no data errors. But communication speed is limited in this mode



4. RS422 Point-to-Point Connection



5. RS422 Multi-Drop Connection



6. RS485 Connection



- RT: 120 Ohm (Not necessary when there is not much noise)
- RS485, like LAN, uses Half Duplex Bus and has no classification between host and terminal



Multi-4/LPCI VA3

Multi-4/LPCI VA3 board is a model that supports PCI Local Bus Spec 2.3. It is designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-4/LPCI VA3 uses core for PCI Local Bus Spec 2.3 designed by SystemBase. Multi-4/LPCI VA3 is used with Panel-4 VA2 panel. It not only supports maximum communication speed of 921.6Kbps but also provides advanced ability to automatically control IO signals when it is used with driver provided by SystemBase. And it provide voltage via direct connector to the device like bar code reader that is related with PC POS so is very useful when it is used in connecting small device (cash drawer, bar code reader, receipt printer and so on) Furthermore, it is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information such as number of ports currently installed, maximum communication speed, kind of communication controller and etc.

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Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485
Communication Controller	SB16C1054PCI
Connector	DB9 (Male)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	15kV Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.

- Product Specifications



- RS232/Combo Common

1. Portx: External Power Supply Setting Jumper

PORT1 is Port #1, PORT2 is Port #2



- RI: Do not supply external power and use pin 9 for RI signal line.
- +5V: Use pin 9 for supplying +5V external power.
- +12V: Use pin 9 for supplying +12V external power.



- RS232 Model

1. 25 Pin Connector (Male)



2. Connecting Terminal



3. Connecting Modem





- RS422/RS485 Combo Model

Combo refers to products that can alternatively use RS422 or RS485 using jumper settings.



2. Panel Switch Settings

Selects RS422, RS485 line interface and mode



1	2	Interface	Mode
OFF	OFF	RS422	Point-to-Point
OFF	ON	RS422	Multi-Drop
ON	OFF	RS485	Non-Echo
ON	ON	RS485	Echo



3. Jumper Settings

a. Portx RT: RS422/RS485 Terminal Resistance Selection

(Port 1 is Port #1, Port2 is Port#2)



- 422: Set RS422 Terminal Resistor
- 485: Set RS485 Terminal Resistor
- None: Do not set Terminal Resistor



b. Slew: Slew Rate Limit Ability



- 10M: Not use Slew Rate Limit ability. Maximum communication speed 921.6Kbps in this mode.
- 250K: Use Slew Rate Limit ability. Communication speed is limited under 250Kbps.

Slew Rate Limit reduces reflected waves emitting from ends of communication cables and speeds up slew-rate driver that restrains EMP electromagnetic waves thereby enabling communication with no data errors. But communication speed is limited in this mode

4. RS422 Point-to-Point Connection







6. RS485 Connection



- RT: 120 Ohm (Not necessary when there is not much noise)
- RS485, like LAN, uses Half Duplex Bus and has no classification between host and terminal


Multi-4C/PCI VA2

Multi-4C/PCI VA2 board is a model that supports PCI Local Bus Spec 2.3. It is designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-4C/PCI VA2 uses core for PCI Local Bus Spec 2.3 designed by SystemBase. Multi-4C/PCI VA2 not only supports maximum communication speed of 921.6Kbps but also provides advanced ability to automatically control IO signals when it is used with driver provided by SystemBase. As Multi-4C/PCI VA2 is cable-end type multiport, we supply DB44(M) to 4 x DB9(M) Cable so that user can work simple cabling. Furthermore, it is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information such as number of ports currently installed, maximum communication speed, kind of communication controller and etc.

Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232
Communication Controller	16C554 or 16C1054
Connector	DB9 (Male)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- RS232 Model

1.9 Pin Connector (Male)



2. Connecting Terminal



3. Connecting Modem





4. PORTx PWR: voltage supply selection jumper

(PORT1 is Port #1~ PORT4 is Port #4)



- +5V: supply 5V voltage to peripheral using 9th.pin.
- +12V: supply 12V voltage to peripheral using 9th.pin.
- RI: Enables RI communication when using RS232. not supply any peripheral.





If there is no 5V voltage in PCI slot of user's PC, should be supplied by Power Supply of PC.



Multi-4C/PCI VA3

Multi-4C/PCI VA3 board is a model that supports PCI Local Bus Spec 2.3. It is designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Multi-4C/PCI VA3 not only supports maximum communication speed of 921.6Kbps but also provides advanced ability to automatically control IO signals when it is used with driver provided by SystemBase. And It has 256 Byte FIFO, so that more stable.

As Multi-4C/PCI VA3 is cable-end type multiport, we supply DB44(M) to 4 x DB9(M) Cable so that user can work simple cabling. Furthermore, it is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information such as number of ports currently installed, maximum communication speed, kind of communication controller and etc.

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Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485
Communication Controller	SB16C1054PCI
Connector	DB9 (Male)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	15KV Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- RS232 Model

1.9 Pin Connector (Male)



2. Connecting Terminal



3. Connecting Modem





4. PORTx PWR: voltage supply selection jumper

(PORT1 is Port #1~ PORT4 is Port #4)





+5V: supply 5V voltage to peripheral using 9th.pin.



+12V: supply 12V voltage to peripheral using 9th.pin.



RI: Enables RI communication when using RS232. not supply any peripheral.





If there is no 5V voltage in PCI slot of user's PC, should be supplied by Power Supply of PC.

* Warning: When a jumper is set to +5V or +12V, it is necessary to make sure that a device that a jumper connects has the same setting as the jumper. Since power is supplied through pin 9, a device may break down when this requirement is not met.



- RS422/RS485 Combo Model

Combo refers to products that can alternatively use RS422 or RS485 using jumper settings.



2. Interface Settings

Selects RS422, RS485 line interface and mode





422: If you want RS422, set jumper like this.



485

485: If you want RS485, set jumper like this



3. Jumper Settings

a. Portx RT: RS422/RS485 Terminal Resistance Selection

(Port 1 is Port #1, Port2 is Port#2)





485: Set RS485 Terminal Resistor



None: Do not set Terminal Resistor

b. Slew: Slew Rate Limit Ability





Multi-4C/PCI VA3



10M: Not use Slew Rate Limit ability. Maximum communication speed 921.6Kbps in this mode.



250K: Use Slew Rate Limit ability. Communication speed is limited under 250Kbps.

Slew Rate Limit reduces reflected waves emitting from ends of communication cables and speeds up slew-rate driver that restrains EMP electromagnetic waves thereby enabling communication with no data errors. But communication speed is limited in this mode

4. RS422 Point-to-Point Connection



5. RS422 Multi-Drop Connection



6. RS485 Connection



Multi-4C/PCI VA3



- RT: 120 Ohm (Not necessary when there is not much noise)
- RS485, like LAN, uses Half Duplex Bus and has no classification between host and terminal



Multi-4J/PCI VA1

Multi-4J/PCI VA1 board is a model that supports PCI Local Bus Spec 2.3. It is designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-4J/PCI VA1 uses core for PCI Local Bus Spec 2.3 designed by SystemBase. Multi-4J/PCI VA1 not only supports maximum communication speed of 921.6Kbps but also provides advanced ability to automatically control IO signals when it is used with driver provided by SystemBase. It is a model equipped with RJ45 connector without external port box and it is possible to supply power through this RJ45 to outside. Also, LED is attached to RJ45 connector to show the current status of signal lines. Furthermore, it is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information such as number of ports currently installed, maximum communication speed, kind of communication controller and etc.

Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485
Communication Controller	16C554
Connector	RJ45
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- RS232 Model

1. RJ45 JACK & 25 Pin Connector (MALE, Extension Cable)



2. Connecting Terminal



3. Connecting Modem





- RS422 Model

1. RJ45 Jack & 25 Pin Connector (MALE, Extension Cable)



2. Mode Change

Select between point-to-point mode and multi-drop mode during the installation of the device driver. The default is mode point-to-point mode.

3 Connecting External point-to-point



4. Connecting multi-drop





- RS485 Model

1. RJ45 Jack & 25 Pin Connector (Male, Extension Cable)



2. Mode Change

Select between non-echo mode and echo mode during the installation of the device driver. The default is non-echo mode.

3. Connection



- RT: 120 Ohm(If there is no serious noise, termination resistors are not required)
- RS485, like LAN, adopts a half duplex bus where the host is not divided from terminals.



Multi-4J/PCI VA2

Multi-4J/PCI VA2 board is a model that supports PCI Local Bus Spec 2.3. It is designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-4J/PCI VA2 uses core for PCI Local Bus Spec 2.3 designed by SystemBase and can be used on PCI 3.3V bus system. Multi-4J/PCI VA2 not only supports maximum communication speed of 921.6Kbps but also provides advanced ability to automatically control IO signals when it is used with driver provided by SystemBase. It is a model equipped with RJ45 connector without external port box and it is possible to supply power through this RJ45 to outside. Also, LED is attached to RJ45 connector to show the current status of signal lines. Furthermore, it is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information such as number of ports currently installed, maximum communication speed, kind of communication controller and etc.

Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485
Communication Controller	16C554
Connector	RJ45
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



-RS232, Combo Common

1. Portx: External Power Supply Setting Jumper

PORT1 is Port #1, PORT2 is Port #2



- RI: Do not supply external power and use pin 9 for RI signal line.
- +5V: Use pin 9 for supplying +5V external power.
- +12V: Use pin 9 for supplying +12V external power.



In case you want to supply +5V power but the PCI slot does not supply it, you should use PC's power supply.



- RS232 Model

1. DB9 Connector (Male), RJ45 Connector



2. Connecting Terminal



3. Connecting Model





- RS422/RS485 Combo Model

Combo refers to products that can alternatively use RS422 or RS485 using jumper settings.



1. DB9 Connector (Male), RJ45 Connector

2. Jumper Settings

a. Interface Settings: Interface Selection



- 422: Select RS422 Interface
- 485: Select RS485 Interface

b. Port1 RT: RS422/RS485 Terminal Resistance Selection



- 422: Set RS422 Terminal Resistor
- 485: Set RS485 Terminal Resistor
- None: Do not set Terminal Resistor



c. Slew: Slew Rate Limit Ability



- 10M: Not use Slew Rate Limit ability. Maximum communication speed 921.6Kbps in this mode.
- 250K: Use Slew Rate Limit ability. Communication speed is limited under 250Kbps.

Slew Rate Limit reduces reflected waves emitting from ends of communication cables and speeds up slew-rate driver that restrains EMP electromagnetic waves thereby enabling communication with no data errors. But communication speed is limited in this mode

3. RS422 Point-to-Point Connection



4. RS422 Multi-Drop Connection





5. RS485 Connection



- RT: 120 Ohm (Not necessary when there is not much noise)
- RS485, like LAN, uses Half Duplex Bus and has no classification between host and terminal



Multi-4JALL+/PCI VA2

Multi-4JALL/PCI VA2 board is a model that supports PCI Local Bus Spec 2.3. It is designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-4JALL+/PCI VA2 uses core for PCI Local Bus Spec 2.3 designed by SystemBase and can be used on PCI 5V and PCI 3.3V bus system. Multi-4 JALL+/PCI VA2 not only supports maximum communication speed of 921.6Kbps but also provides advanced ability to automatically control IO signals when it is used with driver provided by SystemBase. It is a low price model equipped with RJ45 connector without external port box and can set different line interfaces RS232/RS422/RS485 to each port. Also, LED is attached to RJ45 connector to show the current status of signal lines. Furthermore, it is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information such as number of ports currently installed, maximum communication speed, kind of communication controller and etc.

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Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485
Communication Controller	16C554
Connector	RJ45
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- Connection

Pin arrangement of Multi-4JALL+ product is different for pin arrangement of Multi-4J product. So, you should not use Multi-4JALL+ cable mixed with Multi-4J. Please be careful this thing.

1. RJ45 Jack



2. 9 Pin Connector (Male, Expandable Cable)



3. Connecting Terminal





4. Connecting Modem







- 1. Port configuration switch
- 2. External device power supply configuration switch
- 3. PC power supply connector

- Setting up the DIP SW



ON OFF : Choose RS485



- Configuration of DIP SW when setting serial interface



- Configuration of the RS422/RS485 Slew-Rate Limit Ability's DIP SW

1. When setting RS422/RS485 Slew-Rate Limit function



Some RS422/RS485 transceivers are equipped with Slew-Rate Limit ability. In order to maintain compatibility with these chips, the Slew-Rate Limit ability must be activated. If Slew Rate Limit function is activated, communication speed considerably decreases but instead gives off less emission. When activating the Slew-Rate Limit, communication speeds must be below 250Kbps.



2. When not setting the RS422/RS485 Slew-Rate Limit



Initial condition used when opposing RS422/RS485 transceiver does not have the Slew-Rate Limit function. When the Slew-Rate Limit function is not selected maximum communication speed is 921.6Kbps. (Max chip speed: 16Mbps)

- Configuration of the Terminal Resistor's DIP SW 1. When setting RS422 Terminal resistor



2. When setting RS485 Terminal resistor





Multi-4JA/PCI

Multi-4JA/PCI board is a model that supports PCI Local Bus Spec 2.3. It is designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-4JA/PCI uses core for PCI Local Bus Spec 2.3 designed by SystemBase. Multi-4 JA/PCI not only supports maximum communication speed of 921.6Kbps but also provides advanced ability to automatically control IO signals when it is used with driver provided by SystemBase. It is a low price model equipped with RJ45 connector without external port box and can set different line interfaces RS232/RS422/RS485 to each port. Also, LED is attached to RJ45 connector to show the current status of signal lines. Furthermore, it is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information such as number of ports currently installed, maximum communication speed, kind of communication controller and etc.

Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485 (Selectable for each port)
Communication Controller	16C554
Connector	RJ45
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- RS232 Model

1. RS232 Jumper Setting



2. RJ45 JACK & 9 Pin Connector (MALE, Extension Cable)



3. Connecting Terminal

DB	9 TI	ERMINA	۹L	
3		2(3)	RXD	When only pin No. 2,3,5
2		3(2)	TXD	(2,3,7) are informally used connect 7-8(4-5)
4		6(6)	DSR	and 4-6 (4-8-20) in a
6		4(20)	DTR	loopback type
5		5(7)	GND	Parenthesized pin
1		7(4)	RTS	number is applied for
7	┝───┐ └────	6(5)	CTS	25pin terminal)
8		1(8)	DCD	
-	DB 3 2 4 6 5 1 7 8	DB9 T 3 2 4 6 5 1 7 8	DB9 TERMINA 3 2 (3) 2 3(2) 4 6(6) 6 4(20) 5 5(7) 1 7(4) 7 6(5) 8 1(8)	DB9 TERMINAL 3 2(3) RXD 2 3(2) TXD 4 6(6) DSR 6 4(20) DTR 5 5(7) GND 1 7(4) RTS 7 6(5) CTS 8 1(8) DCD

4. Connecting Modem





- RS422 Model

1. RS422 Jumper Setting

RS232		RS422	
			Por
			-12
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RS422,	/RS485	RS485	
00000			
N3232	N3422	N3400	Por
			31

2. RJ45 JACK (*Not providing RS422 DB-type cable separately)



3. Mode Change

Select between point-to-point mode and multi-drop mode during the installation of the device driver. The default is point-to-point mode.

4. RS422 Point-to-Point Connection









- RS485 Model

1. RS485 Jumper Setting



2. RJ45 JACK (*Not providing RS485 DB-type cable separately)



3. Mode Change

Select between non-echo mode and echo mode during the installation of the device driver. The default is non-echo mode.

4. Connection





- Setting RS422/RS485 Termination Resistors



The termination resistors are connected only to channels located at the last end based on RS422 or RS485 transmission mode. Multi-4JA is available for independent connection to termination resistors by using DIP switch on each channel. At this time, be sure to turn "on" the DIP switch on the channel.



Multi-4JALL+/ISO

Multi-4JALL+/ISO board is a model that supports PCI Local Bus Spec 2.3. It is an asynchronous 4 port product designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-4JALL/PCI VA2 uses core for PCI Local Bus Spec 2.3 designed by SystemBase. Multi-4 JALL/PCI VA2 not only supports maximum communication speed of 921.6Kbps but also provides advanced ability to automatically control IO signals when it is used with driver provided by SystemBase. It is a low price model equipped with RJ45 connector without external port box and can set different line interfaces RS232/RS422/RS485 to each port. Also, LED is attached to RJ45 connector to show the current status of signal lines. Furthermore, it is equipped with surge protector to protect internal systems from outer shock and all signal lines are connected to 2.5KV Optical Isolation Protector to have Isolation ability which makes it very useful in industrial fields. Unlike former products, all information about the board is contained within the board itself so the users can easily know information such as number of ports currently installed, maximum communication speed, kind of communication controller and etc.

Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485 (Selectable for each port)
Communication Controller	16C554 (16-byte TX/RX FIFO)
Connector	RJ45
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	Surge Protector Attached, 2.5KV Optical Isolation Protection
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- Connecting Connectors

1. RJ45 Jack



2. 9 Pin Connector (Male, Expandable Cable)



3. Connecting Terminal



4. Connecting Modem






- Configuration of DIP SW when setting serial interface

1. RS232



2. RS422



Point to Point Mode

3. RS485



Non Echo Mode



Multi Drop Mode



Echo Mode



- Configuration of the RS422/RS485 Slew-Rate Limit Ability's DIP SW

1. When setting RS422/RS485 Slew-Rate Limit function



Some RS422/RS485 transceivers are equipped with Slew-Rate Limit ability. In order to maintain compatibility with these chips, the Slew-Rate Limit ability must be activated. If Slew Rate Limit function is activated, communication speed considerably decreases but instead gives off less emission. When activating the Slew-Rate Limit, communication speeds must be below 250Kbps.

2. When not setting the RS422/RS485 Slew-Rate Limit function



Initial condition used when opposing RS422/RS485 transceiver does not have the Slew-Rate Limit function. When the Slew-Rate Limit function is not selected maximum communication speed is 921.6Kbps. (Max chip speed: 16Mbps)

- Configuration of the Terminal Resistor's DIP SW 1. When setting RS422 Terminal resistor



2. When setting RS485 Terminal resistor





Multi-4ALL/cPCI

Multi-4ALL/cPCI is an asynchronous 4 port product designed to be equipped on Compact PCI System. It provides maximum communication speed of 921.6Kbps and different line interface RS232/RS422/RS484 for each port. Furthermore, it is equipped with surge protector to protect internal systems from outer shock.

-	
Communication Speed	Maximum 921.6K BPS
BUS Interface	Compact PCI
Circuit Interface	RS232/RS422/RS485 (Selectable for each port)
Communication Controller	16C554
Connector	DB9 (Female)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- RS232 Model

1. RS232 Jumper Setting



2. 9 Pin Connector (Female)



3. Connecting Terminal





- RS422 Model

1. RS422 Jumper Setting



2. 9 Pin Connector (Female)



3. Mode Change

Either Point-to-Point or Multi-Drop mode can be selected by software on device driver installation. Point-to-Point mode is set to default.

4. RS422 Point-to-Point Connection









-RS485 Model

1. RS485 Jumper Setting



2. 9Pin Connector (Female)



3. Switching Modes

Either Point-to-Point or Multi-Drop mode can be selected by software on device driver installation. Point-to-Point mode is set to default.

4. Line Connection





-Terminal Resistor Setting

Terminal Resistor only connects to channels in terminals in RS422/RS485 mode. Multi-4ALL/cPCI can independently connect to all terminal resistors using jumpers for all channels. To connect to terminal resistors, Turn ON following jumpers.





Multi-8/LPCI VA1

Multi-8/LPCI VA1 board is a model that supports PCI Local Bus Spec 2.3. It is designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts.. Unlike former products, Multi-8/LPCI VA1 uses core for PCI Local Bus Spec 2.3 designed by SystemBase. Multi-8/LPCI VA1 not only supports maximum communication speed of 921.6Kbps but also provides advanced ability to automatically control IO signals when it is used with driver provided by SystemBase. It is used with external port box connected with control board with Female DB25. Also, LED is attached outside to show the current status of signal lines. Furthermore, it is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information such as number of ports currently installed, maximum communication speed, kind of communication controller and etc.

-	Ρ	ro	du	ct	Sp	be	cif	ic	ati	ons	3
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Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485
Communication Controller	16C554
Connector	DB25 (Female)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- RS232 Model

1. 9 Pin, 25 Pin Connector (Female)



2. Connecting Terminal

Outer	Por	t Box	Te	rmina	a 1	
TXD RXD DTR GND DCD RT\$ CTS	2 3 20 7 8 4 5			3(2) 2(3) 6(6) 7(5) 4(7) 5(8) 8(1)	RXD TXD DSR GND RTS CTS DCD	When only pin No. 2,3,7 (2,3,5) are informally used connect 4-5(7-8) and 6-8-20(1-4-6) in a loopback type respectively. Parenthesized pin number is applied for 9pin terminal

3. Connecting Modem





- RS422 Model

1. 25 Pin Connector (Female)



2. Mode Change

Select between point-to-point mode and multi-drop mode during the installation of the device driver. The default is point-to-point mode.

3. Connecting External point-to-point



4. Connecting Multi-drop





- RS485 Model

1. 25 Pin Connector (Female)



2. Mode Change

Select between non-echo mode and echo mode during the installation of the device driver. The default is non-echo mode.

3. Connection



- RT: 120 Ohm(If there is no serious noise, termination resistors are not required)
- RS485, like LAN, adopts a half duplex bus where the host is not divided from terminals.



Multi-8/LPCI VA2

Multi-8/LPCI VA2 board is a model that supports PCI Local Bus Spec 2.3. It is designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-8/LPCI VA2 uses core for PCI Local Bus Spec 2.3 designed by SystemBase. Multi-8/LPCI VA2 is used with Panel-8 VA2. It not only supports maximum communication speed of 921.6Kbps but also provides advanced ability to automatically control IO signals when it is used with driver provided by SystemBase. Furthermore, it is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information controller and etc.

Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485
Communication Controller	16C554
Connector	DB9 (Female)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	15kV Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



-RS232 Model

1. DB9 Connector (Female)



2. Connecting Terminal



3. Connecting Modem





- RS422/RS485 Combo Model

Combo refers to products that can alternatively use RS422 or RS485 using jumper settings.



2. Panel Switch Settings

Selects RS422, RS485 line interface and mode



1	2	Interface	Mode
OFF	OFF	RS422	Point-to-Point
OFF	ON	RS422	Multi-Drop
ON	OFF	RS485	Non-Echo
ON	ON	RS485	Echo



3. Jumper Settings

a. Portx RT: RS422/RS485 Terminal Resistance Selection

(Port 1 is Port #1, Port2 is Port#2)



b. Slew: Slew Rate Limit Ability





- 10M: Not use Slew Rate Limit ability. Maximum communication speed 921.6Kbps in this mode.
- 250K: Use Slew Rate Limit ability. Communication speed is limited under 250Kbps.

Slew Rate Limit reduces reflected waves emitting from ends of communication cables and speeds up slew-rate driver that restrains EMP electromagnetic waves thereby enabling communication with no data errors. But communication speed is limited in this mode.



4. RS422 Point-to-Point Connection



5. RS422 Multi-Drop Connection



6. RS485 Connection



- RT: 120 Ohm (Not necessary when there is not much noise)
- RS485, like LAN, uses Half Duplex Bus and has no classification between host and terminal



Multi-8/LPCI VA3

Multi-8/LPCI VA3 board is a model that supports PCI Local Bus Spec 2.3. It is designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-8/LPCI VA3 uses core for PCI Local Bus Spec 2.3 designed by SystemBase. Multi-8/LPCI VA3 is used with Panel-8 VA2. It not only supports maximum communication speed of 921.6Kbps but also provides advanced ability to automatically control IO signals when it is used with driver provided by SystemBase. And SB16C1058PCI has 256 byte deep FIFO, so this card provides more fast and sate communication. Furthermore, it is PCI hipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information such as number of ports currently installed, maximum communication speed, kind of communication controller and etc.

Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485
Communication Controller	SB16C1058PCI
Connector	DB9 (Female)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	15kV Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



-RS232, Combo Common

1. Portx: External Power Supply Setting Jumper

PORT1 is Port #1, PORT2 is Port #2





- RI: Do not supply external power and use pin 9 for RI signal line.
- +5V: Use pin 9 for supplying +5V external power.
- +12V: Use pin 9 for supplying +12V external power.



-RS232 Model

1. DB9 Connector (Female)



2. Connecting Terminal



3. Connecting Model





- RS422/RS485 Combo Model

Combo refers to products that can alternatively use RS422 or RS485 using jumper settings.



2. Panel Switch Settings

Selects RS422, RS485 line interface and mode



1	2	Interface	Mode
OFF	OFF	RS422	Point-to-Point
OFF	ON	RS422	Multi-Drop
ON	OFF	RS485	Non-Echo
ON	ON	RS485	Echo

3. Jumper Settings

a. Portx RT: RS422/RS485 Terminal Resistance Selection

(Port 1 is Port #1, Port2 is Port#2)



b. Slew: Slew Rate Limit Ability





- 10M: Not use Slew Rate Limit ability. Maximum communication speed 921.6Kbps in this mode.
- 250K: Use Slew Rate Limit ability. Communication speed is limited under 250Kbps.

Slew Rate Limit reduces reflected waves emitting from ends of communication cables and speeds up slew-rate driver that restrains EMP electromagnetic waves thereby enabling communication with no data errors. But communication speed is limited in this mode.



4. RS422 Point-to-Point Connection



5. RS422 Multi-Drop Connection



6. RS485 Connection



- RT: 120 Ohm (Not necessary when there is not much noise)
- RS485, like LAN, uses Half Duplex Bus and has no classification between host and terminal



Multi-8C/PCI VA2

Multi-8C/PCI VA2 board is a model that supports PCI Local Bus Spec 2.3. It is designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-8C/PCI uses core for PCI Local Bus Spec 2.3 designed by SystemBase. Multi-8C/PC VA2I not only supports maximum communication speed of 921.6Kbps but also provides advanced ability to automatically control IO signals when it is used with driver provided by SystemBase. As Multi-8C/PCI VA2 is cable-end type multiport, we supply DB62(M) to 8x DB9(M) Cable so that user can work simple cabling. Furthermore, it is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information such as number of ports currently installed, maximum communication speed, kind of communication controller and etc.

Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232
Communication Controller	16C554 or 16C1054
Connector	DB9 (Male)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	15kV Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- RS232 Model

1.9 Pin Connector (Male)



2. Connecting Terminal



3. Connecting Modem





Multi-8C/PCI VA3

Multi-8C/PCI VA3 board is a model that supports PCI Local Bus Spec 2.3. It is designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Multi-8C/PCI VA3 not only supports maximum communication speed of 921.6Kbps but also provides advanced ability to automatically control IO signals when it is used with driver provided by SystemBase. And It has 256 Byte FIFO, so that more stable.

As Multi-8C/PCI VA3 is cable-end type multiport, we supply DB44(M) to 8 x DB9(M) Cable so that user can work simple cabling. Furthermore, it is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information such as number of ports currently installed, maximum communication speed, kind of communication controller and etc.

Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485
Communication Controller	SB16C1058PCI
Connector	DB9 (Male)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	15KV Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- RS232 Model

1.9 Pin Connector (Male)



2. Connecting Terminal



3. Connecting Modem





- RS422/485 Combo Model

Combo refers to products that can alternatively use RS422 or RS485 using jumper settings.



2. Interface Settings

Selects RS422, RS485 line interface and mode





422: If you want RS422, set jumper like this.



485

485: If you want RS485, set jumper like this



3. Jumper Settings

a. Portx RT: RS422/RS485 Terminal Resistance Selection

(Port 1 is Port #1, Port2 is Port#2)





422: Set RS422 Terminal Resistor



485: Set RS485 Terminal Resistor



None: Do not set Terminal Resistor



b. Slew: Slew Rate Limit Ability





10M: Not use Slew Rate Limit ability. Maximum communication speed 921.6Kbps in this mode.



250K: Use Slew Rate Limit ability. Communication speed is limited under 250Kbps.

Slew Rate Limit reduces reflected waves emitting from ends of communication cables and speeds up slew-rate driver that restrains EMP electromagnetic waves thereby enabling communication with no data errors. But communication speed is limited in this mode

4. RS422 Point-to-Point Connection









6. RS485 Connection



• RT: 120 Ohm (Not necessary when there is not much noise)

RS485, like LAN, uses Half Duplex Bus and has no classification between host and termina



Multi-16C/PCI VA1

Multi-16C/PCI VA1 board is a model that supports PCI Local Bus Spec 2.3. It is an asynchronous 16 port product designed to automatically set I/O address and IRQ number when ROM bios or the operating system starts. Unlike former products, Multi-16C/PCI VA1 uses core for PCI Local Bus Spec 2.3 designed by SystemBase. Multi-16C/PCI VA1 board supports RS232 line interface and maximum communication speed of 921.6Kbps. Also, DB78 pin connector is provided for outside communication. Furthermore, it is equipped with surge protector to protect internal systems from outer shock. Unlike former products, all information about the board is contained within the board itself so the users can easily know information such as number of ports currently installed, maximum communication speed, kind of communication controller and etc.

Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232
Communication Controller	16C554
Connector	DB78 (Female)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



- RS232 Connector

1. 78Pin Connector (Female)

TXD1		—TXD3
TXD2 -		TXD4
RTS1-		
RXD1	+3 + 42 + 6 + 6	-RXD3
CST1	+(4))))))))))))))))))))))))))))))))))))	-CTS3
CTS2-	24 <u>63</u>	CTS4
GND GND		GND GND
GND CTS6		GND
CTS5		-CTS7
RXD6		
RTS6-		RTS8
RTS5 TXD6	(9) (48) (68)	
TXD5		
GND		TXD11
TXD10-		TXD12
RTS9 RTS10		—RIS11 ——RTS12
RXD9		-RXD11
CTS9	14 63 63	
CTS10-		CTS12
GND	35 (74)	GND
GND		-GND
CTS13		
RXD14		RXD16
RTS14 -	38 (77)+	RTS16
RTS13		-RTS15
TXD13		TXD15

• Multi-16C/PCI only supports TXD, RXD, RTS, CTS signal lines.



Multi-32/LPCI VA1

Multi-32/LPCI VA1 is a model that supports PCI Local Bus Spec 2.3, which is designed to set up I/O address and IRQ number automatically upon starting ROM BIOS and Operating System without DIP switch to board. In the Multi-32/LPCI VA1, 32 ports only occupy 64 bytes of small I/O space and there is no limitation of number to be installed as long as slots are available, which solves a problem of Multi-32/PCI VA1 as it was limited to install maximum 4 units. It doesn't have any conflicts between I/O address and Interrupt, which has been a frequent problem in products ISA. Also, the driver identifies the number of each port box and interface type automatically; thus easily installation is available. In addition, it is also designed to protect the system safely from transient-voltage by attaching the surge protector on the TX, RX line.

Communication Speed	Maximum 921.6K BPS		
BUS Interface	PCI Local Bus Spec 2.3		
Circuit Interface	RS232/RS422/RS485		
Communication Controller	16C554		
Connector	DB25 (Female)		
I/O Address	Automatic Configuration		
IRQ Number	Automatic Configuration		
Circuit Protection	15kV Surge Protector Attached		
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux		
Manufacturer	SystemBase Co., Ltd.		



- RS232 Model

1. 9 Pin, 25 Pin Connector (Female)



2. Connecting Terminal

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Outer	Por	t Box	Te	rmina	a 1	
TXD RXD DTR GND DCD RTS CTS	2 3 20 7 8 4 5			3(2) 2(3) 6(6) 7(5) 4(7) 5(8) 8(1)	RXD TXD DSR GND RTS CTS DCD	When only pin No. 2,3,7 (2,3,5) are informally used connect 4-5(7-8) and 6-8-20(1-4-6) in a loopback type respectively. Parenthesized pin number is applied for 9pin terminal

3. Connecting Modem





- RS422 Model

1. 25 Pin Connector (Female)



2. Mode Change

Select between point-to-point mode and multi-drop mode during the installation of the device driver. The default is point-to-point mode.

3. Connecting External point-to-point



4. Connecting Multi-drop




- RS485 Model

1. 25 Pin Connector (Female)



2. Mode Change

Select between non-echo mode and echo mode during the installation of the device driver. The default is non-echo mode.

3. Connection



- RT: 1200hm (if there is no serious noise, termination resistors are not required)
- RS485, like, adopts a half duplex bus where the host is not divided from terminals.



Multi-32/LPCI VA2

Multi-32/LPCI VA2 board is the model supports PCI Local Bus Spec 2.3. It has 32 Ports that can set I/O address and IRQ number automatically. Unlike existing products, VA2 applies PCI Local Bus Spec 2.3 Core which was developed by SystemBase. Multi-32/LPCI VA2 board is used with Panel-8e VA2. It not only supports maximum speed of 921.6Kbps but also offers enhanced management of automatic I/O. Also it protects system from any outside damage by implementing Surge Protector on signal line. Unlike other products, every information of the board is in board itself. So after implementing driver, automatically user can know implemented port, communicate controller, sort of circuit interface and maximum communication speed in now.

- Product Specifications

Communication Speed	Maximum 921.6K BPS
BUS Interface	PCI Local Bus Spec 2.3
Circuit Interface	RS232/RS422/RS485
Communication Controller	16C554
Connector	DB9 (Female)
I/O Address	Automatic Configuration
IRQ Number	Automatic Configuration
Circuit Protection	15kV Surge Protector Attached
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux
Manufacturer	SystemBase Co., Ltd.



-RS232 Model

1. DB9 Connector (Female)



2. Connecting Terminal



3. Connecting Modem





- RS422/RS485 Combo model

What is combo in this case? : The products that can be selected in RS422, 485 by jumper setting

1. DB9 Female connector pin specification



2. Panel switch setting

a. RS422, RS485 circuit interface selecting jumper





- ON: RS422 interface
- OFF: RS485 interface



b. PORTx SLEW: Slew Rate Limit function fit jumper

PORT1 is 1st port, PORT2is 2st port



- 10M: Not use Slew Rate Limit ability. Maximum communication speed 921.6Kbps in this mode.
- 250K: Use Slew Rate Limit ability. Communication speed is limited under 250Kbps.

Slew Rate Limit reduces reflected waves emitting from ends of communication cables and speeds up slew-rate driver that restrains EMP electromagnetic waves thereby enabling communication with no data errors. But communication speed is limited in this mode.



c. PORTx RT : RS422, RS485 terminal resister select jumper

PORT 1 is first port, PORT2 is second port



3. RS422 Point-to-point Connection





4. RS422 Multi-drop Connection



5. RS485 Connection



- RT: 120 ohm(If there is no serious noise, termination resistors are not required)
- RS485, like LAN, adopts a half duplex bus where the host is not divided from terminals.



Multi-32/LPCI VA3

Multi-32/LPCI VA3 board is the model supports PCI Local Bus Spec 2.3. It has 32 Ports that can set I/O address and IRQ number automatically. In addition, unlike existing products, VA3 applies PCI Local Bus Spec 2.3 Core which was developed by SystemBase. Multi-32/LPCI VA3 board is used with Panel-8e VA2 or Panel-8e VA3. It not only supports maximum speed of 921.6Kbps but also offers enhanced management of automatic I/O. Also it protects system from any outside damage by implementing Surge Protector on signal line. Furthermore VA3 add DB9 Male type, power port in Panel-8e VA2 or VA3 panel thereby enabling variety use than before. Unlike other products, every information of the board is in board itself. So after implementing driver, automatically user can know implemented port, communicate controller, sort of circuit interface and maximum communication speed in now.

- Product Specifications

Communication Speed	Maximum 921.6K BPS	
BUS Interface	PCI Local Bus Spec 2.3	
Circuit Interface	RS232/RS422/RS485	
Communication Controller	PCI Controller : SB4002A	
	SystemBase's Octal UART Controller : SB16C1058	
Connector	DB9 (Male, Female)	
I/O Address	Automatic Configuration	
IRQ Number	Automatic Configuration	
Circuit Protection	15kV Surge Protector Attached	
Supported OS	Windows 98/2000/NT/XP/2003/Vista/2008/7, SCO UNIX, Linux	
Manufacturer	SystemBase Co., Ltd.	



- RS232 model

1. DB9 Connector



2. Connecting Terminal



3. Connecting Modem





4. External Power Supply



In case you want to supply +5V power, you should use PC's power supply.





- +5V: supply 5V voltage to peripheral.
- +12V: supply 12V voltage to peripheral.
- RI: Enables RI communication when using RS232.



- RS422/RS485 Combo model

What is combo in this case? : The products that can be selected in RS422, 485 by jumper setting

1. DB9 Female, Male connector pin specification



2. Panel switch setting

a. RS422, RS485 circuit interface selecting jumper





RS 422 Interface Mode



RS 485 Interface Mode





b. PORTx RT : RS422, RS485 terminal resister selection jumper



- 10M: Not use Slew Rate Limit function. Maximum communication speed 921.6Kbps in this mode.
- 250K: Use Slew Rate Limit function. Communication speed is limited under 250Kbps.

Slew Rate Limit reduces reflected waves emitting from ends of communication cables and speeds up slew-rate driver that restrains EMP electromagnetic waves thereby enabling communication with no data errors. But communication speed is limited in this mode.





c. PORTx RT : RS422, RS485 terminal resister selecting jumper



- 422: Install RS422 terminal resister.
- 485: Install RS485 terminal resister.
- NONE: Not install terminal resister.

* What is terminal resister?

Transmission interface has several design impedance standards. So when that comes up to this specific resister, we need terminal resister in order to avoid reflection phenomenon.



3. RS422 Point-to-point Connection



4. RS422 Multi-drop Connection



5. RS485 Connection



- RT: 120 ohm(If there is no serious noise, termination resistors are not required)
- RS485, like LAN, adopts a half duplex bus where the host is not divided from terminals.



Panel Compatibility Table

		Panel-4		
Board	Panel	VA1	VA2	VA3
Multi-4	LPCI VA1	0	Х	-
	LPCI VA2	х	0	-
	LPIC VA3	Х	0	-

		Panel-8			
Board	Panel	VA1	VA2	VA3	
Multi-8	LPCI VA1	0	Х	-	
	LPCI VA2	Х	0	-	
	LPCI VA3	Х	0	-	

		Panel-8E			
Board	Panel	VA1	VA2	VA3	
Multi-32	LPCI VA1	0	х	Х	
	LPCI VA2	х	0	0	
	LPCI VA3	Х	0	0	



Power Consumption

Туре	Product Name	Power Consumption (W)	Voltage (V)	Current (A)
VA3 PCI MultiPort	Multi-1/LPCI RS232	1.6401	3.3	0.497
	Multi-1/LPCI COMBO	1.6071	3.3	0.487
	Multi-2/PCI RS232	1.8381	3.3	0.557
	Multi-2/PCI COMBO	1.7721	3.3	0.537
	Multi-4/LPCI RS232	4.5012	3.3	1.364
	Multi-4/LPCI COMBO	4.3692	3.3	1.324
	Multi-8/LPCI RS232	5.8971	3.3	1.787
	Multi-8/LPCI COMBO	5.6331	3.3	1.707
	Multi-32/LPCI RS232	25.9479	3.3	7.863
	Multi-32/LPCI COMBO	24.9579	3.3	7.563

In PCISig, It can supply a power supply maximum 25W per one slot. So, If you use a Multi-32/LPCI, I recommend you to use external power supply in order to manage more stably.

