

ASIC Controls

ASIC System Controller Series

ASIC Series (DDC Monitoring)

Supported version

TOP Design Studio

V1.4.3 or higher



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We want to thank our customers who use the Touch Operation Panel.

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Select a TOP model and an external device.
- 3. TOP communication setting** [Page 4](#)

Describes how to set the TOP communication.
- 4. External device setting** [Page 9](#)

Describes how to set up communication for external devices.
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Describes the cable specifications required for connection.
- 6. Supported addresses** [Page 12](#)

Refer to this section to check the addresses which can communicate with an external device.

1. System configuration

The system configuration of TOP and "ASIC Controls - ASIC Controls Series" is as follows:

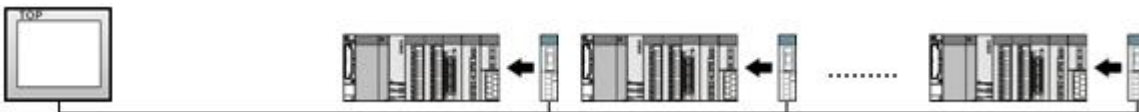
Series	CPU	Link I/F	Communication method	Communication setting	Cable
ASIC Series	ASIC/2-7040	Controller built-in Port	RS-232C	3. TOP communication setting 4. External Device setting	5.1. Cable table 1
	ASIC/2-7540		RS-485	3. TOP communication setting 4. External Device setting	5.2. Cable table 2

■ Connectable configuration

- 1:1 (one TOP and one external device) connection – configuration which is possible in RS232C/422/485 communication.

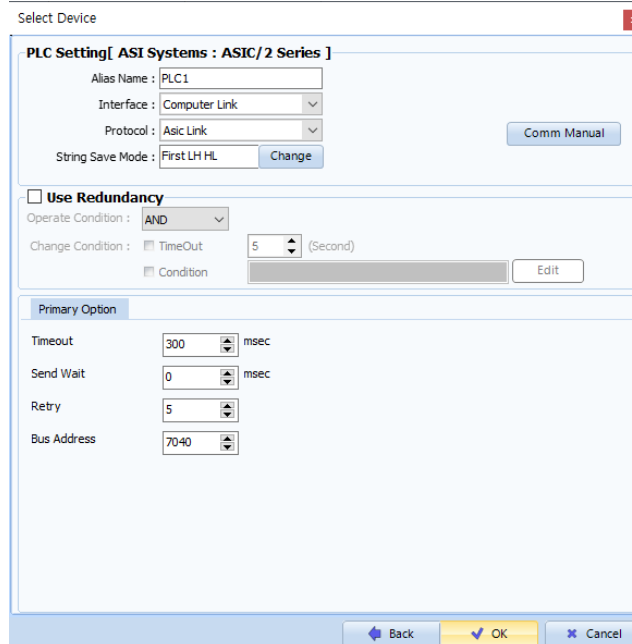
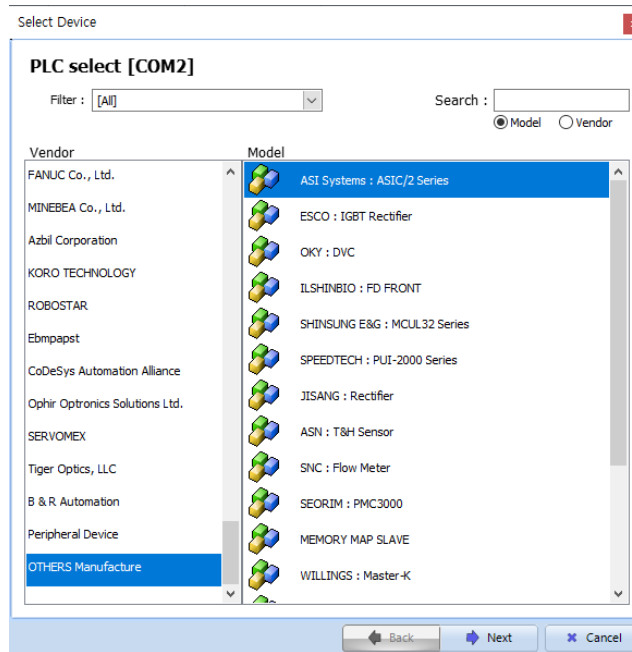


- 1:N (one TOP and multiple external devices) connection – configuration which is possible in RS422/485 communication.



2. External device selection

- Select a TOP model and a port, and then select an external device.



Settings		Contents					
TOP	Model	Check the TOP display and process to select the touch model.					
External device	Vendor	Select the vendor of the external device to be connected to TOP. Select "OTHERS Manufacture".					
	PLC	Select an external device to connect to TOP. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: black; color: white;">Model</th> <th style="background-color: black; color: white;">Interface</th> <th style="background-color: black; color: white;">Protocol</th> </tr> </thead> <tbody> <tr> <td>DDC Monitoring (ASIC/2 Series)</td> <td>Computer Link</td> <td>PC Link</td> </tr> </tbody> </table> <p>Please check the system configuration in Chapter 1 to see if the external device you want to connect is a model whose system can be configured.</p>	Model	Interface	Protocol	DDC Monitoring (ASIC/2 Series)	Computer Link
Model	Interface	Protocol					
DDC Monitoring (ASIC/2 Series)	Computer Link	PC Link					

3. TOP communication setting

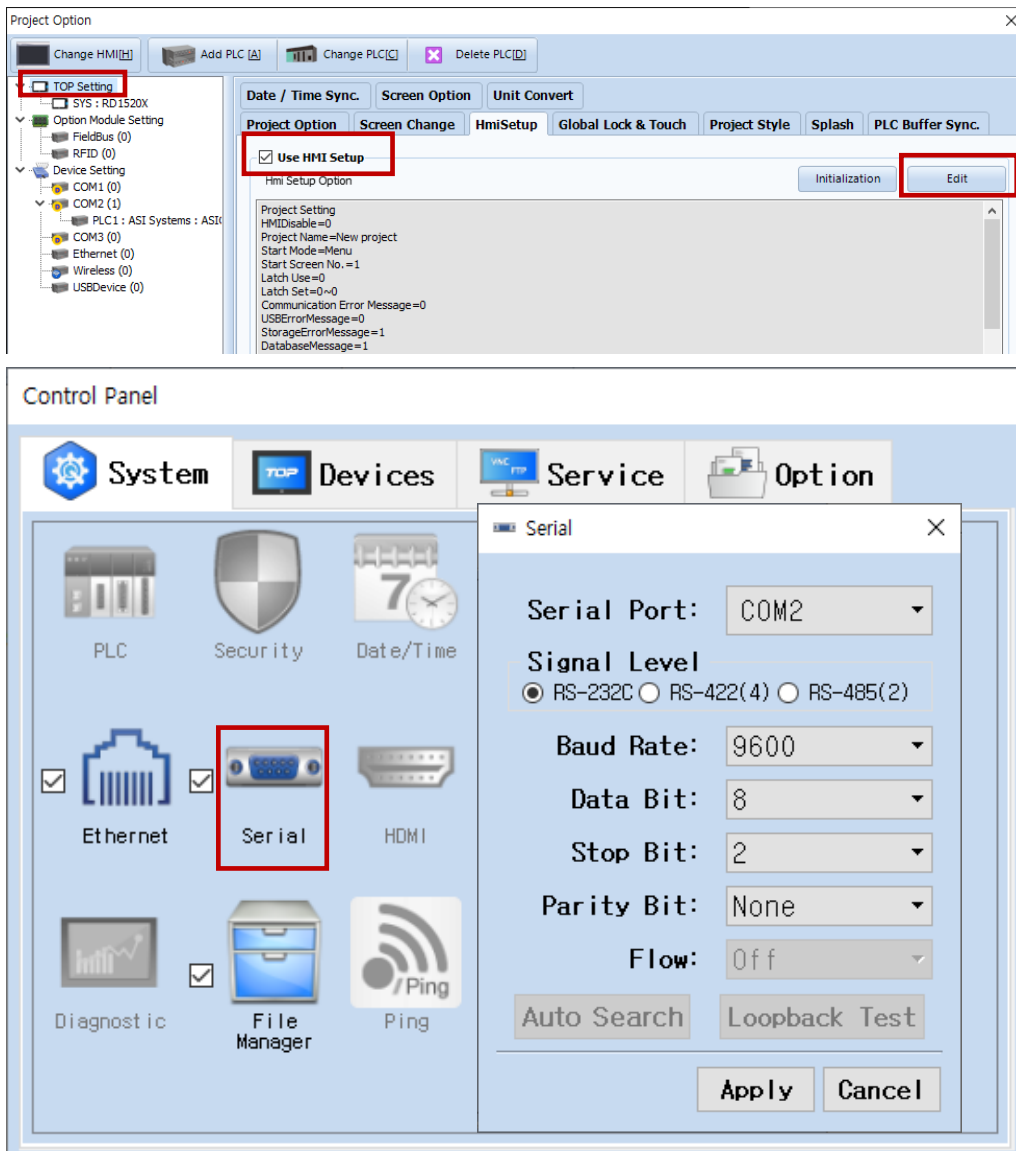
The communication can be set in TOP Design Studio or TOP main menu. The communication should be set in the same way as that of the external device.

3.1 Communication setting in TOP Design Studio

(1) Communication interface setting

■ [Project > Project Property > TOP Setting] → [Project Option > "Use HMI Setup" Check > Edit > Serial]

– Set the TOP communication interface in TOP Design Studio.



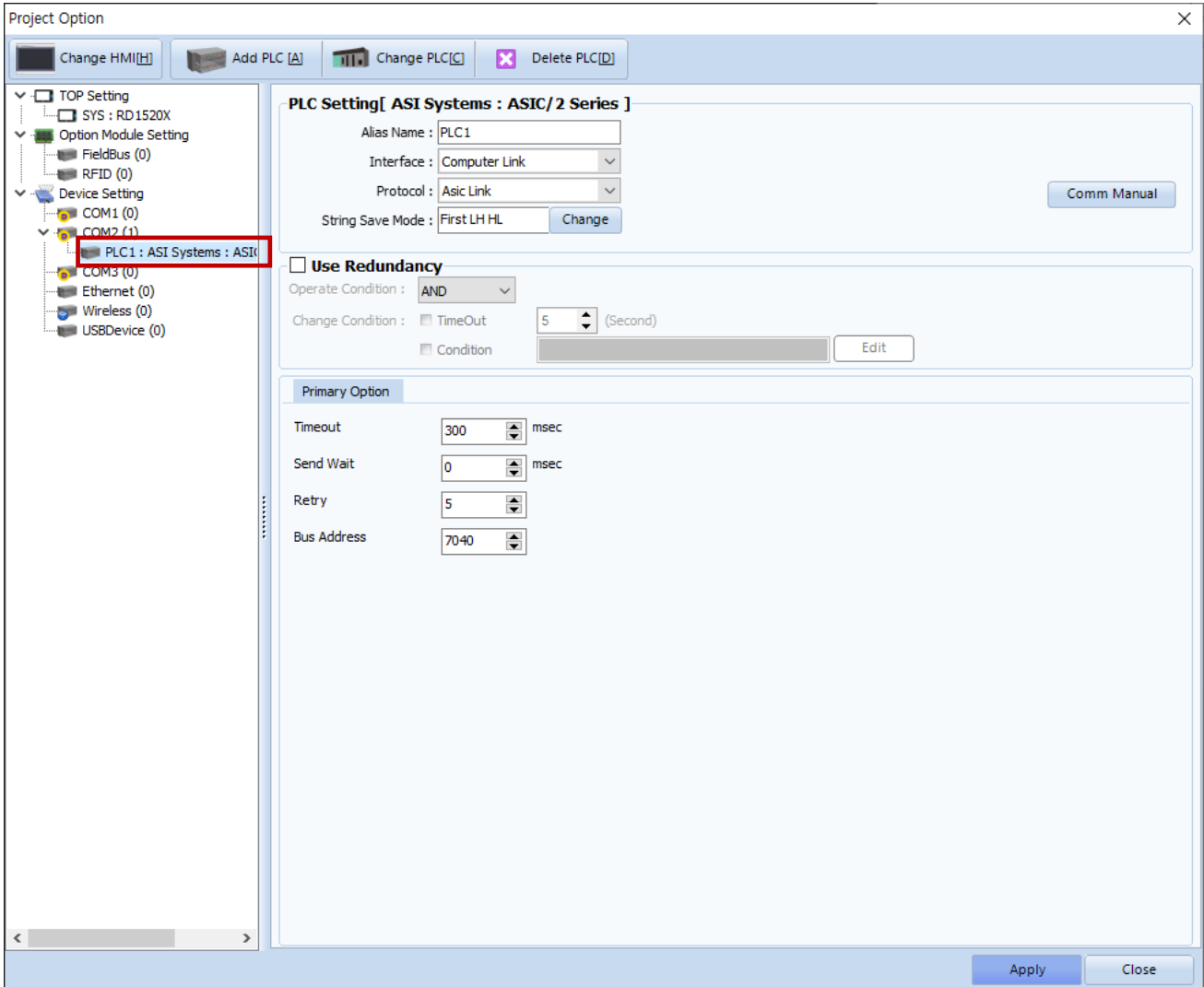
Items	TOP	External device	Remarks
Signal Level (port)	RS-232C/RS-485	RS-232C/RS-485	
Baud Rate		9600	
Data Bit		8	
Stop Bit		2	
Parity Bit		None	

* The above settings are examples recommended by the company.

Items	Description
Signal Level	Select the serial communication method between the TOP and an external device.
Baud Rate	Select the serial communication speed between the TOP and an external device.
Data Bit	Select the serial communication data bit between the TOP and an external device.
Stop Bit	Select the serial communication stop bit between the TOP and an external device.
Parity Bit	Select the serial communication parity bit check method between the TOP and an external device.

(2) Communication option setting

- [Project > Project Property > PLC Setting > COM > "DDC Monitoring (ASIC/2 Series)"]
 – Set the options of the Computer Link communication driver in TOP Design Studio.

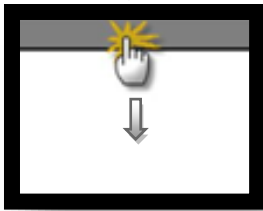


Items	Settings	Remarks
Interface	Configure the communication interface between the TOP and an external device.	Refer to "2. External device selection".
Protocol	Configure the communication protocol between the TOP and an external device.	
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device. (※ Caution: Please set the timeout time to 1000 [mSec] in ASIC Series.)	
SendWait (ms)	Set the waiting time between TOP's receiving a response from an external device and sending the next command request.	

3.2. Communication setting in TOP

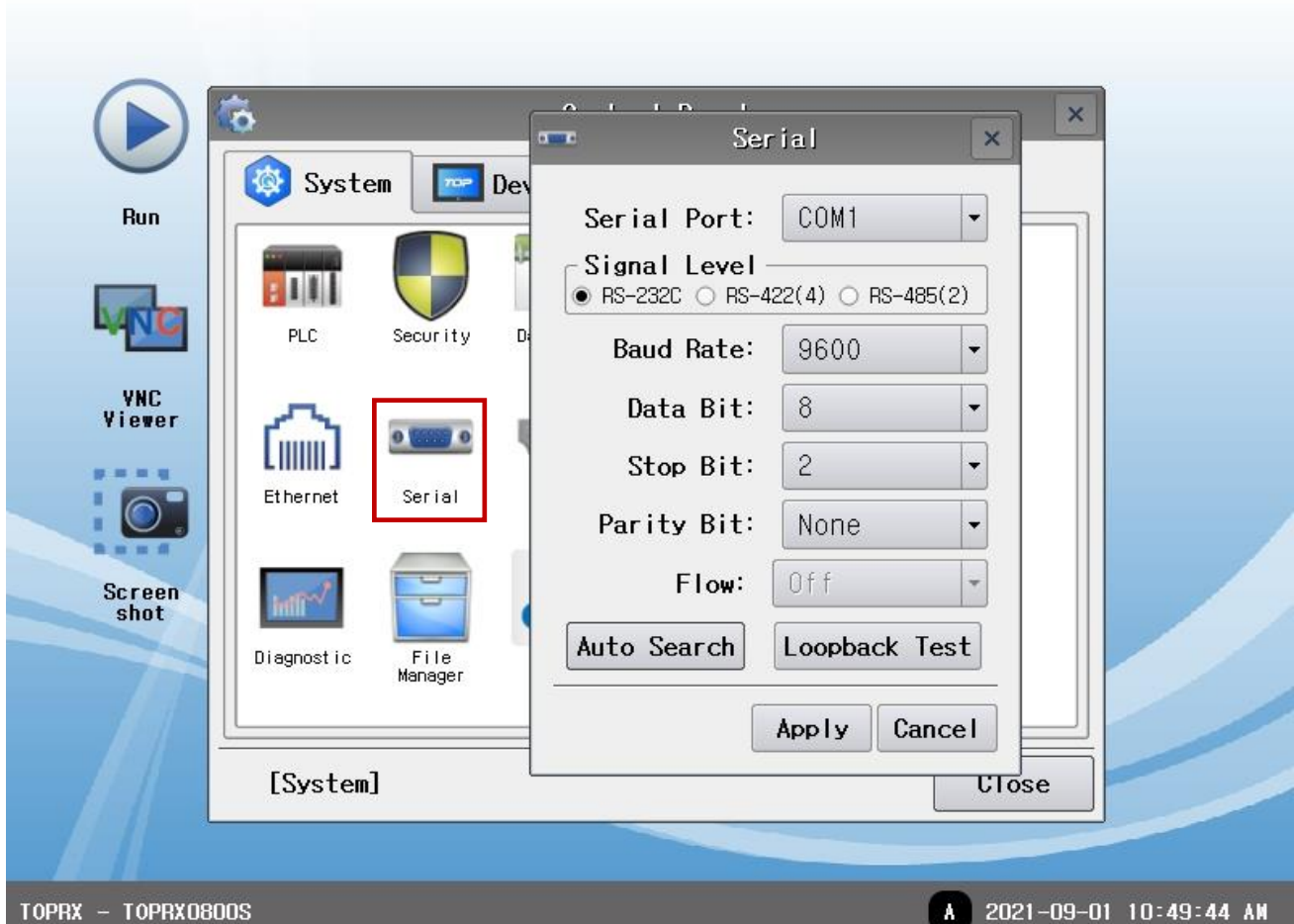
* This is a setting method when "Use HMI Setup" in the setting items in "3.1 TOP Design Studio" is not checked.

- Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.



(1) Communication interface setting

- [Main Screen > Control Panel > Serial]



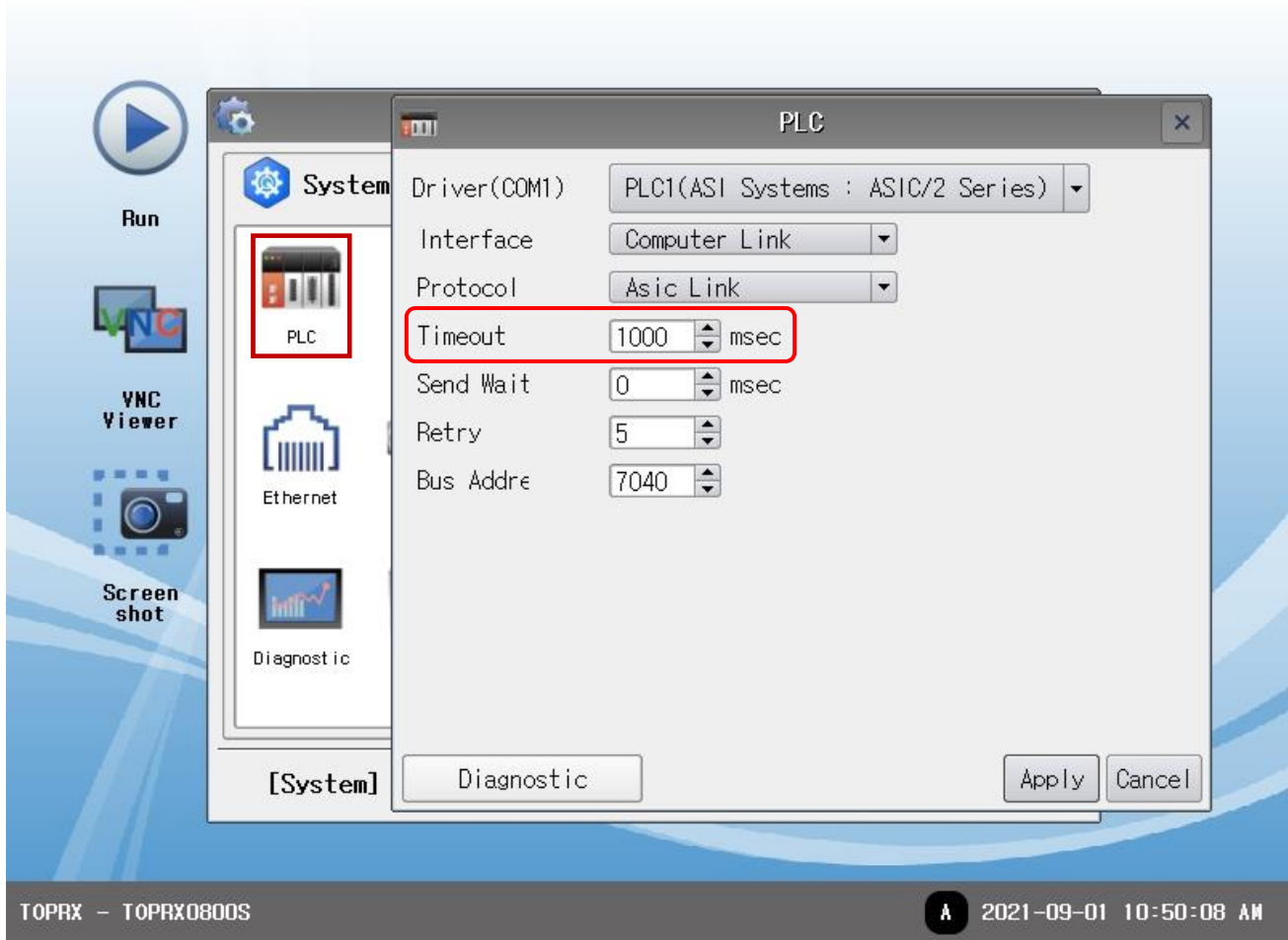
Items	TOP	External device	Remarks
Signal Level (port)	RS-232C/RS-485	RS-232C/RS-485	
Baud Rate	9600		Fixed
Data Bit	8		Fixed
Stop Bit	2		Fixed
Parity Bit	None		Fixed

* The above settings are setting examples recommended by the company.

Items	Description
Signal Level	Select the serial communication method between the TOP and an external device.
Baud Rate	Select the serial communication speed between the TOP and an external device.
Data Bit	Select the serial communication data bit between the TOP and an external device.
Stop Bit	Select the serial communication stop bit between the TOP and an external device.
Parity Bit	Select the serial communication parity bit check method between the TOP and an external device.

(2) Communication option setting

■ [Main Screen > Control Panel > PLC]



Items	Settings	Remarks
Interface	Configure the communication interface between the TOP and an external device.	Refer to "2. External device selection".
Protocol	Configure the communication protocol between the TOP and an external device.	
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device. (※ Caution: Please set the timeout time to 1000 [mSec] in ASIC Series.)	
SendWait (ms)	Set the waiting time between TOP's receiving a response from an external device and sending the next command request.	
BUS Address (Prefix)	Set BUS Address (Prefix) for communication device.	

3.3 Communication diagnostics

- Check the interface setting status between the TOP and an external device.
 - Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.
 - Check if the COM port settings you want to use in [Control Panel > Serial] are the same as those of the external device.

- Diagnosis of whether the port communication is normal or not
 - Touch "Communication diagnostics" in [Control Panel > PLC].
 - The Diagnostics dialog box pops up on the screen and determines the diagnostic status.

OK	Communication setting normal
Time Out Error	Communication setting abnormal - Check the cable, TOP, and external device setting status. (Reference: Communication diagnostics sheet)

- Communication diagnostics sheet
 - If there is a problem with the communication connection with an external terminal, please check the settings in the sheet below.

Items	Contents	Check		Remarks	
System configuration	How to connect the system	OK	NG	1. System configuration	
	Connection cable name	OK	NG		
TOP	Version information	OK	NG	2. External device selection 3. Communication setting	
	Port in use	OK	NG		
	Driver name	OK	NG		
	Other detailed settings	OK	NG		
	Relative prefix	Project setting	OK		NG
		Communication diagnostics	OK		NG
	Serial Parameter	Transmission Speed	OK		NG
Data Bit		OK	NG		
Stop Bit		OK	NG		
Parity Bit		OK	NG		
External device	CPU name	OK	NG	4. External device setting	
	Communication port name (module name)	OK	NG		
	Protocol (mode)	OK	NG		
	Setup Prefix	OK	NG		
	Other detailed settings	OK	NG		
	Serial Parameter	Transmission Speed	OK		NG
		Data Bit	OK		NG
		Stop Bit	OK		NG
Parity Bit		OK	NG		
Check address range		OK	NG	6. Supported addresses (For details, please refer to the PLC vendor's manual.)	

4. External Device Settings

Use "ASI Visual Expert" and set together as follows. Reboot the external device after downloading the configuration. For a more detailed setting method than described in this example, refer to the user manual of the external device.

Step 1. The information window is activated on the screen when you connect to the controller after running "ASI Visual Expert".

Step 2. "ASI Visual Expert" → Click "System Bus" at the top of the information window to activate information about it.

(※Information about "System Bus" is the communication details of ASIC Controls to RS485.)

Step 3. "ASI Visual Expert" → Click "Local Bus" at the top of the information window to activate information about it.

(※Information about "Local Bus" is the communication details of ASIC Controls to RS232C.)

Step Reference. The communication settings are set in 'System/Local Baud Rate', and other data bits, stop bits, and parity bits are fixed values.

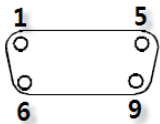
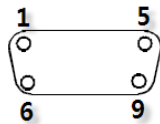
5. Cable table

This chapter introduces a cable diagram for normal communication between the TOP and the corresponding device.
 (The cable diagram described in this section may differ from the recommendations of "SAI - DDC Monitoring (ASIC/2 Series)")

5.1. Cable table 1

■ RS232 connection

TOP COM Port (9 pin)

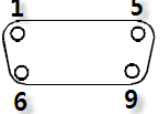
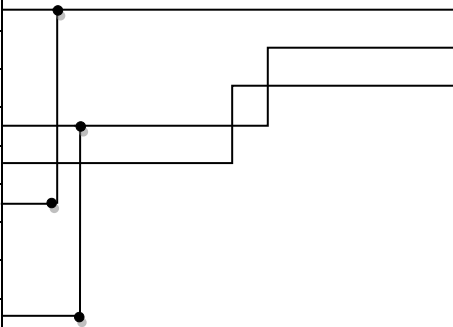

TOP COM			Cable connection	External device		
Pin arrangement* Note 1)	Signal name	Pin number		Pin number	Signal name	Pin arrangement* Note 1)
 <p>Based on communication cable connector front, D-SUB 9 Pin male (male, convex)</p>					 <p>Based on communication cable connector front, D-SUB 9 Pin male (male, convex)</p>	
	RD	2		2		SD
	SD	3		3		RD
	SG	5		5		SG

***Note 1)** The pin arrangement is as seen from the connecting side of the cable connection connector.

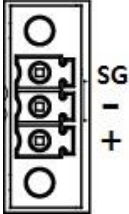
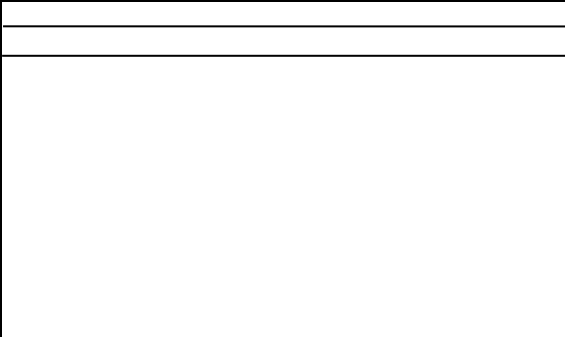
5.2. Cable table 2

■ RS485 connection

TOP COM Port (9 pin)

TOP COM			Cable connection	External device	
Pin arrangement* Note 1	Signal name	Pin number		Signal name	Pin arrangement* Note 1
 <p>Based on communication cable connector front, D-SUB 9 Pin male (male, convex)</p>	RDA	1		D+	<p>D+ D- SG</p>  <p>Based on communication cable connector front, Terminal Block 3 Pin</p>
		2		D-	
		3		SG	
	RDB	4			
	SG	5			
	SDA	6			
		7			
		8			
	SDB	9			

*[Note 1](#)) The pin arrangement is as seen from the connecting side of the cable connection connector.

TOP COM		Cable connection	External device
Pin arrangement	Signal name		Signal name
	+		DA(Pin 1)
	-		DB(Pin 2)

6. Support Address

The devices available in TOP are as follows:

The device range (address) may differ depending on the CPU module series/type. The TOP series supports the maximum address range used by the external device series. Please refer to each CPU module user manual and be take caution to not deviate from the address range supported by the device you want to use.

Contents	Bit Address	Word Address	32 Bit	Remarks
W	00:000:000.0 ~ 99:255:255.15	00:000:000 ~ 99:255:255		
B	00:000:000.0 ~ 99:255:255.15	00:000:000 ~ 99:255:255		

– Reference

Device Formation	Object (2)	Index (3)	Attribute (3)
	99 (Maximum)	255 (Maximum)	255 (Maximum)