

LS Industrial Systems Co., Ltd

XGT(XGK-CPU), XGB(XBC-CPU/XBM-CPU) Series

CNET Driver

Support version OS V4.0 and over



XDesignerPlus 4.0.0.0 and over

CONTENTS

Thank you for using TOP series of M2I corporation.

Please read this manual carefully to know connection methods and procedures of "TOP to External device".

1. System configuration Page 2



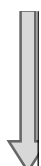
A section for showing connectable external devices, serial signal types, connection configurations. Refer this section to select the right system configuration.

2. Selection of TOP, External device Page 4



A section for selecting a Top model and the external device.

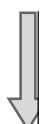
3. Example of system setting Page 5



A section for explaining examples to connect communications of TOP to External Device.

Select the correct example in your case according to "1. System configuration"

4. Communication setting Page 27



A section for Communication setting.

The setting should be the same with the external device.

5. Cable diagram Page 30



A section for cable to connect to external device.

Select a suitable cable diagram for your system.

6. Usable address Page 35

A section for usable address to communicate with external device.

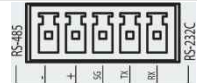
1. System configuration

System configuration of TOP and "LS Industrial Systems Co., Ltd – XGT(XGK), XGB(XBC/XBM) Series".

Series	CPU*1)	Link I/F	Comm. type	System setting	Cable
XGK	XGK-CPUH XGK-CPUA XGK-CPUS XGK-CPUE XGK-CPUU	XGL-C22A, CH1	RS232	4.1 setting ex 1 (5 Page)	5.1 cable diagram 1 (30 Page)
		XGL-C22A, CH2	RS232	4.2 setting ex 2 (7 Page)	5.1 cable diagram 1 (30 Page)
		XGL-C42A, CH1	RS422	4.3 setting ex 3 (9 Page)	5.2 cable diagram 2 (31 Page)
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		XGL-C42A, CH2	RS422	4.5 setting ex 5 (13 Page)	5.2 cable diagram 2 (31 Page)
			RS485	4.6 setting ex 6 (15 Page)	5.3 cable diagram 3 (32 Page)
		XGL-CH2A, CH1	RS232	4.1 setting ex 1 (5 Page)	5.1 cable diagram 1 (30 Page)
		XGL-CH2A, CH2	RS422	4.5 setting ex 5 (13 Page)	5.2 cable diagram 2 (31 Page)
			RS485	4.6 setting ex 6 (15 Page)	5.3 cable diagram 3 (32 Page)
		XGB	XBM-D□16S XBM-D□32S XBC-D□32H XBC-D□64H	CPU on Cnet *2), CH1	RS232
CPU on Cnet *2), CH2	RS485			4.8 setting ex 8 (19 Page)	5.5 cable diagram 5 (34 Page)
XBL-C21A, CH2	RS232			4.9 setting ex 9 (21 Page)	5.1 cable diagram 1 (30 Page)
XBL-C41A, CH2	RS422			4.10 setting ex 10 (23 Page)	5.2 cable diagram 2 (31 Page)
	RS485			4.11 setting ex 11 (25 Page)	5.3 cable diagram 3 (32 Page)

*1) Confirm that version written CPU unit label is 1.1 and over.

*2) Cnet port on CPU unit of XGB Series

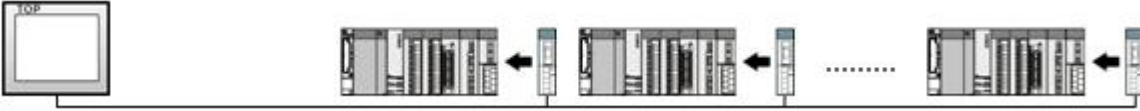
Type name	Image	Detail name
Cnet on CPU unit		5 pin terminal port of XBC/XBM/XEC CPU module (RS-232 1 port + RS-485 1 port)

■ Connection configuration

- 1 : 1(TOP 1 unit to External device 1 unit) connection – It is available with RS232C/422/485.

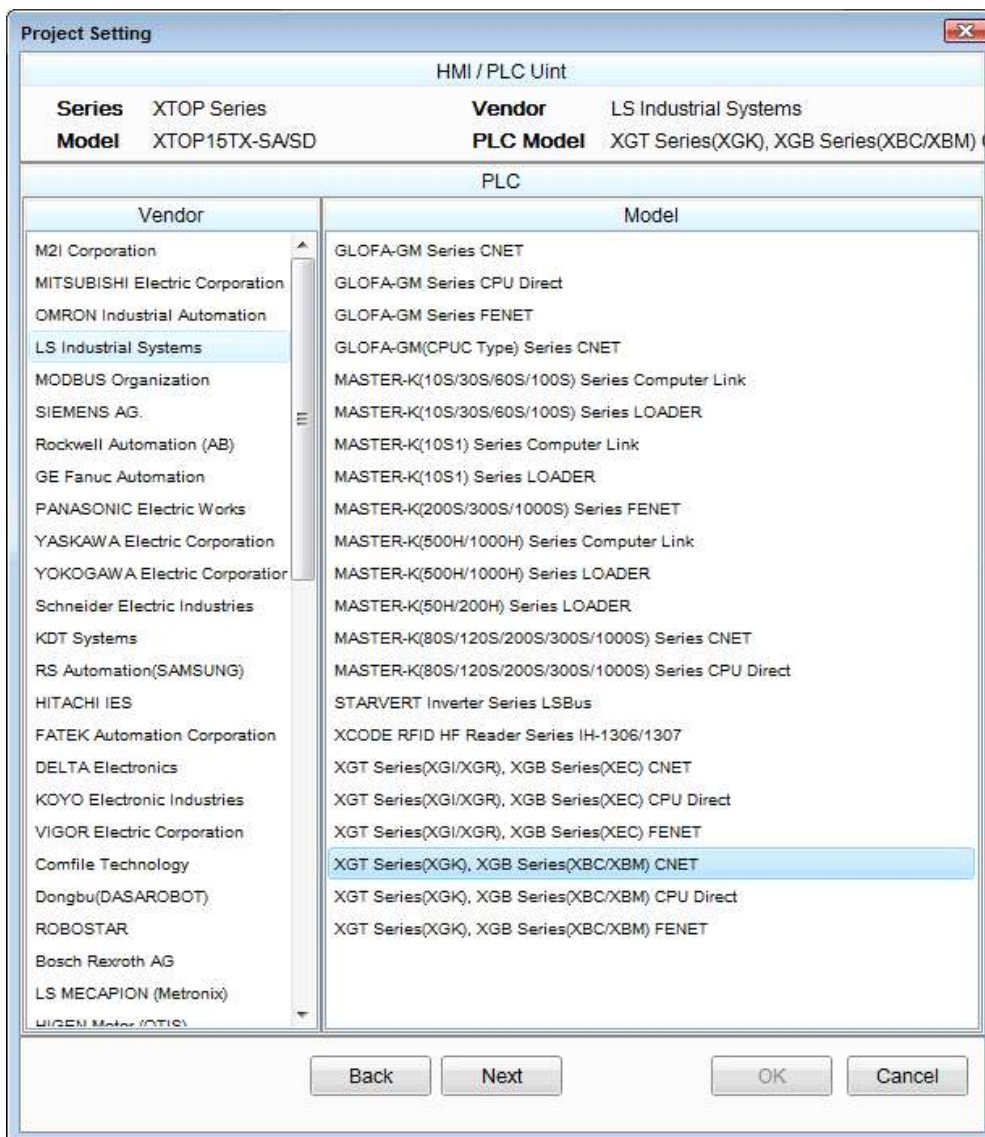


- 1 : N(TOP 1 unit to External device N unit) connection – It is available with RS422/485.



2. Selection of TOP, External device

Select a external device which is communicated to the TOP.



Setting Items		Description				
TOP	Series	Select a TOP series which is communicated with external device. Install an OS file v3.1 as diagram below before download a project file you have made. <table border="1" style="margin: 10px auto;"> <thead> <tr> <th>Series</th> <th>OS Version</th> </tr> </thead> <tbody> <tr> <td>XTOP / HTOP</td> <td>V4.0</td> </tr> </tbody> </table>	Series	OS Version	XTOP / HTOP	V4.0
	Series	OS Version				
XTOP / HTOP	V4.0					
Name	Select a TOP model which is communicated with external device.					
External Device	Vendor	Select vendor of the external device which is communicated with TOP. Select " <u>LS Industrial Systems Co., Ltd</u> ".				
	PLC	Select a model name of the external device which is communicated with TOP. Select " <u>XGT(XGK), XGB(XBC/XBM) Series CNET</u> ". Check whether the external device you want to use is connectable or not in "1. System configuration".				

3. Example of system setting

Set Communication interface of TOP and " XGT(XGK-CPU),XGB(XBC-CPU/XBM-CPU)Series CNET Driver".

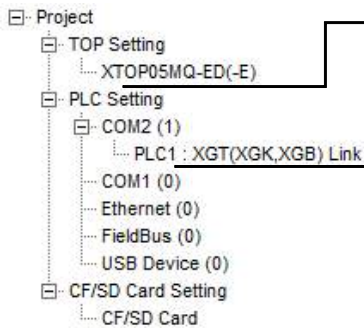
3.1 Example 1

Set your system as below.

Item	TOP	External device	Note
Serial Signal Level (port/channel)	RS-232 (COM2)	RS-232 (CH 1)	User set
Station number (PLC Address)	—	0	User set
Serial Baud rate [BPS]	115200		User set
Serial Data bit [Bit]	8		User set
Serial Stop bit [Bit]	1		User set
Serial Parity bit [Bit]	NONE		User set
Run Mode	XGT private server		User set

(1) XDesignerPlus Setting

[Project >Project property] of XDesignerPlus as below and download it to TOP machine.



■ [Project >Project Property > Project >TOP Setting > TOP Name]

Set communication interface of TOP.

The 'Communication Port' dialog box shows the following settings:

COM 1	COM 2
- Boud Rate : 115200	- Boud Rate : 115200
- Data Bit : 8	- Data Bit : 8
- Stop Bit : 1	- Stop Bit : 1
- Parity Bit : None	- Parity Bit : None
	- Signal Level : RS-232C

■ External device setup

Set the communication driver option "XGT(XGK), XGB(XBC,XBM) Series CNET"

The 'PLC Comm Info' dialog box shows the following settings:

- Station Number(PLC): 0
- CPU Type: XGB
- Device Read Type: Continuous

-Station Number : Station number of external device.

-CPU Type : Select CPU type

-Device Read Type : Select protocol type.

(2) External device setup

Run "XG-PD Editor" program for communication setting and set as below.

If you want to change communication interface, modify refer to PLC manual.

1. Run File > New File". Select CPU Type and push OK button refer to "1. system configuration".
2. Connect CPU LOADER port of XGT Series and serial port of PC by serial cross cable.
(If there is USB port in CPU, connect USB.)
3. Run [Online] > [Connection settings] menu. Select [Connection settings->Type] and click [Connect] button.
4. Run [Online] > [I/O Information] and read slot number. Run [Online] > [Read Parameter] and read parameter information of slot of communication card.
5. double click slot of Cnet card in [Project Window], show dialog box of [Default settings].
Set [Connection] and [Run Mode] as below and click [OK].



Item		Contents	Note
Connection setting CH 1	Comm. Type	RS232C	fixation
	Baud rate	115200	User set
	Data bit	8	User set
	Stop bit	1	User set
	Parity bit	NONE	User set
	Modem Type	Null	Fixed
	Station No.	0	User set

6. Transfer setting contents to CPU at [Online] > [Parameter Write].
7. Reset PLC at [Online] > [Reset] >][Reset PLC].

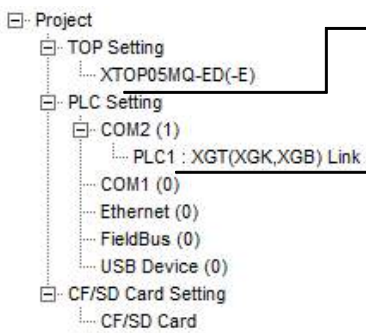
3.2 Example 2

Set your system as below.

Item	TOP	External device	Note
Serial Signal Level (port/channel)	RS-232 (COM2)	RS-232 (CH 2)	User set
Station number (PLC Address)	—	0	User set
Serial Baud rate [BPS]	115200		User set
Serial Data bit [Bit]	8		User set
Serial Stop bit [Bit]	1		User set
Serial Parity bit [Bit]	NONE		User set
Run Mode	XGT private server		User set

(1) XDesignerPlus Setting

[Project >Project property] of XDesignerPlus as below and download it to TOP machine.



■ [Project >Project Property > Project >TOP Setting > TOP Name]

Set communication interface of TOP.

■ External device setup

Set the communication driver option "XGT(XGK), XGB(XBC,XBM) Series CNET"

-Station Number : Station number of external device.

-CPU Type : Select CPU type

-Device Read Type : Select protocol type.

(2) External device setup

Run "XG-PD Editor" program for communication setting and set as below.
 If you want to change communication interface, modify refer to PLC manual.

1. Run File > New File". Select CPU Type and push OK button refer to "1. system configuration".
2. Connect CPU LOADER port of XGT Series and serial port of PC by serial cross cable.
 (If there is USB port in CPU, connect USB.)
3. Run [Online] > [Connection settings] menu. Select [Connection settings->Type] and click [Connect] button.
4. Run [Online] > [I/O Information] and read slot number. Run [Online] > [Read Parameter] and read parameter information of slot of communication card.
5. Double click slot of Cnet card in [Project Window], show dialog box of [Default settings].
 Set [Connection] and [Run Mode] as below and click [OK].



Item	Contents	Note	
Connection setting CH 2	Comm. Type	RS232C	fixation
	Baud rate	115200	User set
	Data bit	8	User set
	Stop bit	1	User set
	Parity bit	NONE	User set
	Modem Type	Null	fixation
	Station No.	0	User set

6. Transfer setting contents to CPU at [Online] > [Write].
7. Reset PLC at [Online] > [Reset PLC].

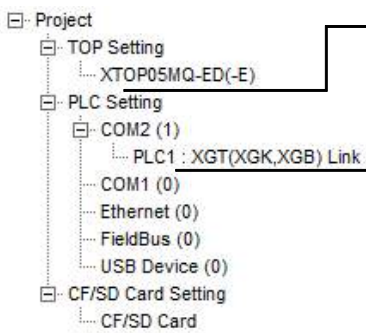
3.3 Example 3

Set your system as below.

Item	TOP	External device	Note
Serial Signal Level (port/channel)	RS-422 (4 wire, COM2)	RS-422 (4wire, CH 1)	User set
Station number (PLC Address)	—	0	User set
Serial Baud rate [BPS]	115200		User set
Serial Data bit [Bit]	8		User set
Serial Stop bit [Bit]	1		User set
Serial Parity bit [Bit]	NONE		User set
Run Mode	XGT private server		User set

(1) XDesignerPlus Setting

[Project >Project property] of XDesignerPlus as below and download it to TOP machine.



■ [Project >Project Property > Project >TOP Setting > TOP Name]

Set communication interface of TOP.

■ External device setup

Set the communication driver option "XGT(XGK), XGB(XBC,XBM) Series CNET"

-Station Number : Station number of external device.

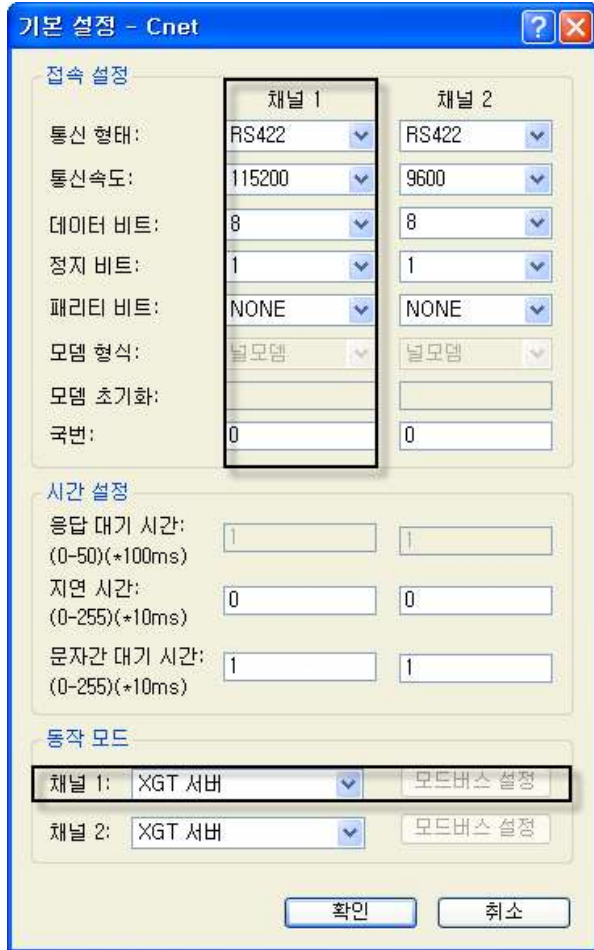
-CPU Type : Select CPU type

-Device Read Type : Select protocol type.

(2) External device setup

Run "XG-PD Editor" program for communication setting and set as below.
 If you want to change communication interface, modify refer to PLC manual.

1. Run File > New File". Select CPU Type and push OK button refer to "1. system configuration".
2. Connect CPU LOADER port of XGT Series and serial port of PC by serial cross cable.
 (If there is USB port in CPU, connect USB.)
3. Run [Online] > [Connection settings] menu. Select [Connection settings->Type] and click [Connect] button.
4. Run [Online] > [I/O Information] and read slot number. Run [Online] > [Read Parameter] and read parameter information of slot of communication card.
5. Double click slot of Cnet card in [Project Window], show dialog box of [Default settings].
 Set [Connection] and [Run Mode] as below and click [OK].



Item	Contents	Note	
Connection setting CH 1	Comm. Type	RS-422	fixation
	Baud rate	115200	User set
	Data bit	8	User set
	Stop bit	1	User set
	Parity bit	NONE	User set
	Modem Type	Null	fixation
	Station No.	0	User set

6. Transfer setting contents to CPU at [Online] > [Write].
7. Reset PLC at [Online] > [Reset PLC].

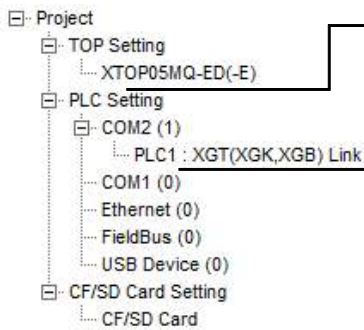
3.4 Example 4

Set your system as below.

Item	TOP	External device	Note
Serial Signal Level (port/channel)	RS-485 (2 wire, COM2)	RS-485 (2 wire, CH 1)	User set
Station number (PLC Address)	—	0	User set
Serial Baud rate [BPS]	115200		User set
Serial Data bit [Bit]	8		User set
Serial Stop bit [Bit]	1		User set
Serial Parity bit [Bit]	NONE		User set
Run Mode	XGT private server		User set

(1) XDesignerPlus Setting

[Project > Project property] of XDesignerPlus as below and download it to TOP machine.



■ [Project > Project Property > Project > TOP Setting > TOP Name]

Set communication interface of TOP.

The 'Communication Port' dialog box shows settings for two COM ports:

- + COM 1**
 - Boud Rate: 115200
 - Data Bit: 8
 - Stop Bit: 1
 - Parity Bit: None
- + COM 2**
 - Boud Rate: 115200
 - Data Bit: 8
 - Stop Bit: 1
 - Parity Bit: None
 - Signal Level: RS-485(2)

■ External device setup

Set the communication driver option "XGT(XGK), XGB(XBC,XBM) Series CNET".

The 'PLC Comm Info' dialog box shows the following settings:

- Station Number(PLC): 0
- CPU Type: XGB
- Device Read Type: Continuous

-Station Number : Station number of external device.

-CPU Type : Select CPU type

-Device Read Type : Select protocol type.

(2) External device setup

Run "XG-PD Editor" program for communication setting and set as below.
 If you want to change communication interface, modify refer to PLC manual.

1. Run File > New File". Select CPU Type and push OK button refer to "1. system configuration".
2. Connect CPU LOADER port of XGT Series and serial port of PC by serial cross cable.
 (If there is USB port in CPU, connect USB.)
3. Run [Online] > [Connection settings] menu. Select [Connection settings->Type] and click [Connect] button.
4. Run [Online] > [I/O Information] and read slot number. Run [Online] > [Read Parameter] and read parameter information of slot of communication card.
5. Double click slot of Cnet card in [Project Window], show dialog box of [Default settings].
 Set [Connection] and [Run Mode] as below and click [OK].



Item	Contents	Note	
Connection setting CH 1	Comm. Type	RS-485	fixation
	Baud rate	115200	User set
	Data bit	8	User set
	Stop bit	1	User set
	Parity bit	NONE	User set
	Modem Type	Null	fixation
	Station No.	0	User set

6. Transfer setting contents to CPU at [Online] > [Write].
7. Reset PLC at [Online] > [Reset PLC].

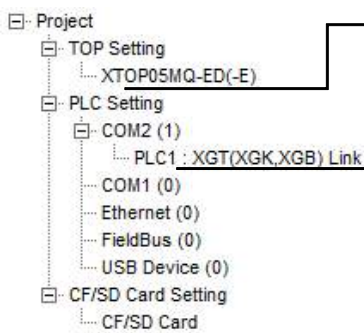
3.5 Example 5

Set your system as below.

Item	TOP	External device	Note
Serial Signal Level (port/channel)	RS-422 (4 wire, COM2)	RS-422 (4wire, CH 2)	User set
Station number (PLC Address)	—	0	User set
Serial Baud rate [BPS]	115200		User set
Serial Data bit [Bit]	8		User set
Serial Stop bit [Bit]	1		User set
Serial Parity bit [Bit]	NONE		User set
Run Mode	XGT private server		User set

(1) XDesignerPlus Setting

[Project > Project property] of XDesignerPlus as below and download it to TOP machine.



■ [Project > Project Property > Project > TOP Setting > TOP Name]

Set communication interface of TOP.

■ External device setup

Set the communication driver option "XGT(XGK), XGB(XBC,XBM) Series CNET".

-Station Number : Station number of external device.

-CPU Type : Select CPU type

-Device Read Type : Select protocol type.

(2) External device setup

Run "XG-PD Editor" program for communication setting and set as below.
 If you want to change communication interface, modify refer to PLC manual.

1. Run File > New File". Select CPU Type and push OK button refer to "1. system configuration".
2. Connect CPU LOADER port of XGT Series and serial port of PC by serial cross cable.
 (If there is USB port in CPU, connect USB.)
3. Run [Online] > [Connection settings] menu. Select [Connection settings->Type] and click [Connect] button.
4. Run [Online] > [I/O Information] and read slot number. Run [Online] > [Read Parameter] and read parameter information of slot of communication card.
5. Double click slot of Cnet card in [Project Window], show dialog box of [Default settings].
 Set [Connection] and [Run Mode] as below and click [OK].



Item	Contents	Note	
Connection setting CH 2	Comm. Type	RS-422	fixation
	Baud rate	115200	User set
	Data bit	8	User set
	Stop bit	1	User set
	Parity bit	NONE	User set
	Modem Type	Null	fixation
	Station No.	0	User set

6. Transfer setting contents to CPU at [Online] > [Write].
7. Reset PLC at [Online] > [Reset PLC].

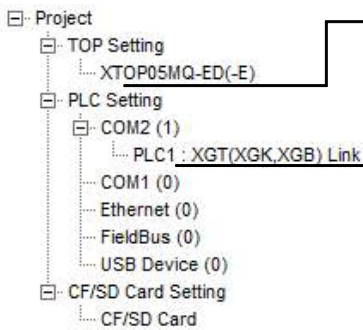
3.6 Example 6

Set your system as below.

Item	TOP	External device	Note
Serial Signal Level (port/channel)	RS-485 (2 wire, COM2)	RS-485 (2 wire, CH 2)	User set
Station number (PLC Address)	—	0	User set
Serial Baud rate [BPS]	115200		User set
Serial Data bit [Bit]	8		User set
Serial Stop bit [Bit]	1		User set
Serial Parity bit [Bit]	NONE		User set
Run Mode	XGT private server		User set

(1) XDesignerPlus Setting

[Project > Project property] of XDesignerPlus as below and download it to TOP machine.



■ [Project > Project Property > Project > TOP Setting > TOP Name]

Set communication interface of TOP.

■ External device setup

Set the communication driver option "XGT(XGK), XGB(XBC,XBM) Series CNET".

-Station Number : Station number of external device.

-CPU Type : Select CPU type

-Device Read Type : Select protocol type.

(2) External device setup

Run "XG-PD Editor" program for communication setting and set as below.
 If you want to change communication interface, modify refer to PLC manual.

1. Run File > New File". Select CPU Type and push OK button refer to "1. system configuration".
2. Connect CPU LOADER port of XGT Series and serial port of PC by serial cross cable.
 (If there is USB port in CPU, connect USB.)
3. Run [Online] > [Connection settings] menu. Select [Connection settings->Type] and click [Connect] button.
4. Run [Online] > [I/O Information] and read slot number. Run [Online] > [Read Parameter] and read parameter information of slot of communication card.
5. Double click slot of Cnet card in [Project Window], show dialog box of [Default settings].
 Set [Connection] and [Run Mode] as below and click [OK].



Item	Contents	Note	
Connection setting CH 2	Comm. Type	RS-485	fixation
	Baud rate	115200	User set
	Data bit	8	User set
	Stop bit	1	User set
	Parity bit	NONE	User set
	Modem Type	Null	fixation
	Station No.	0	User set

6. Transfer setting contents to CPU at [Online] > [Write].
7. Reset PLC at [Online] > [Reset PLC].

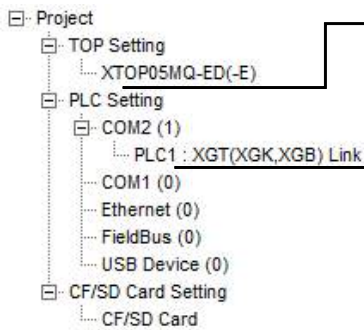
3.7 Example 7

Set your system as below.

Item	TOP	External device	Note
Serial Signal Level (port/channel)	RS-232 (COM2)	RS-232 (CH 1)	User set
Station number (PLC Address)	—	0	User set
Serial Baud rate [BPS]	115200		User set
Serial Data bit [Bit]	8		User set
Serial Stop bit [Bit]	1		User set
Serial Parity bit [Bit]	NONE		User set
Run Mode	XGT private server		User set

(1) XDesignerPlus Setting

[Project > Project property] of XDesignerPlus as below and download it to TOP machine.



■ [Project > Project Property > Project > TOP Setting > TOP Name]

Set communication interface of TOP.

The 'Communication Port' dialog box contains the following settings:

* Communication Port	
+ COM 1	+ COM 2
- Boud Rate : 115200	- Boud Rate : 115200
- Data Bit : 8	- Data Bit : 8
- Stop Bit : 1	- Stop Bit : 1
- Parity Bit : None	- Parity Bit : None
	- Signal Level : RS-232C

■ External device setup

Set the communication driver option "XGT(XGK), XGB(XBC,XBM) Series CNET".

The 'PLC Comm Info' dialog box contains the following settings:

PLC Comm Info	
Station Number(PLC)	0
CPU Type	XGB
Device Read Type	Continuous

-Station Number : Station number of external device.

-CPU Type : Select CPU type

-Device Read Type : Select protocol type.

(2) External device setup

Run "XG-PD Editor" program for communication setting and set as below.
 If you want to change communication interface, modify refer to PLC manual.

1. Run File > New File". Select CPU Type and push OK button refer to "1. system configuration".
2. Connect CPU LOADER port of XGT Series and serial port of PC by serial cross cable.
 (If there is USB port in CPU, connect USB.)
3. Run [Online] > [Connection settings] menu. Select [Connection settings->Type] and click [Connect] button.
4. Run [Online] > [I/O Information] and read slot number. Run [Online] > [Read Parameter] and read parameter information of slot of communication card.
5. Double click slot of Cnet card in [Project Window], show dialog box of [Default settings].
 Set [Connection] and [Run Mode] as below and click [OK].



Item	Contents	Note	
Connection setting CH 1	Comm. Type	RS-232C	fixation
	Baud rate	115200	User set
	Data bit	8	User set
	Stop bit	1	User set
	Parity bit	NONE	User set
	Modem Type	Null	fixation
	Station No.	0	User set

6. Transfer setting contents to CPU at [Online] > [Write].
7. Reset PLC at [Online] > [Reset PLC].

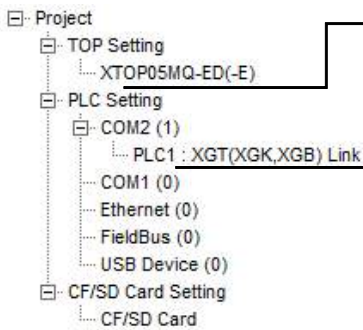
3.8 Example 8

Set your system as below.

Item	TOP	External device	Note
Serial Signal Level (port/channel)	RS-485 (2 wire, COM2)	RS-485 (2 wire, CH 2)	User set
Station number (PLC Address)	—	0	User set
Serial Baud rate [BPS]	115200		User set
Serial Data bit [Bit]	8		User set
Serial Stop bit [Bit]	1		User set
Serial Parity bit [Bit]	NONE		User set
Run Mode	XGT private server		User set

(1) XDesignerPlus Setting

[Project > Project property] of XDesignerPlus as below and download it to TOP machine.



■ [Project > Project Property > Project > TOP Setting > TOP Name]

Set communication interface of TOP.

The 'Communication Port' dialog box shows settings for two COM ports:

- + COM 1**
 - Boud Rate: 115200
 - Data Bit: 8
 - Stop Bit: 1
 - Parity Bit: None
- + COM 2**
 - Boud Rate: 115200
 - Data Bit: 8
 - Stop Bit: 1
 - Parity Bit: None
 - Signal Level: RS-485(2)

■ External device setup

Set the communication driver option "XGT(XGK), XGB(XBC,XBM) Series CNET".

The 'PLC Comm Info' dialog box shows the following settings:

- Station Number(PLC): 0
- CPU Type: XGB
- Device Read Type: Continuous

-Station Number : Station number of external device.

-CPU Type : Select CPU type

-Device Read Type : Select protocol type.

(2) External device setup

Run "XG-PD Editor" program for communication setting and set as below.
 If you want to change communication interface, modify refer to PLC manual.

1. Run File > New File". Select CPU Type and push OK button refer to "1. system configuration".
2. Connect CPU LOADER port of XGT Series and serial port of PC by serial cross cable.
 (If there is USB port in CPU, connect USB.)
3. Run [Online] > [Connection settings] menu. Select [Connection settings->Type] and click [Connect] button.
4. Run [Online] > [I/O Information] and read slot number. Run [Online] > [Read Parameter] and read parameter information of slot of communication card.
5. Double click slot of Cnet card in [Project Window], show dialog box of [Default settings].
 Set [Connection] and [Run Mode] as below and click [OK].



Item	Contents	Note	
Connection setting CH 2	Comm. Type	RS-485	fixation
	Baud rate	115200	User set
	Data bit	8	User set
	Stop bit	1	User set
	Parity bit	NONE	User set
	Modem Type	Null	fixation
	Station No.	0	User set

6. Transfer setting contents to CPU at [Online] > [Write].
7. Reset PLC at [Online] > [Reset PLC].

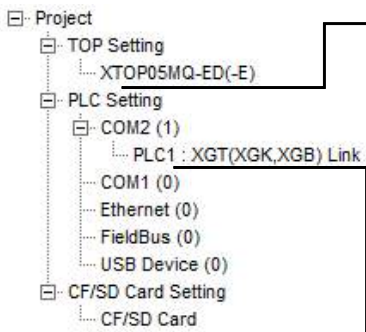
3.9 Example 9

Set your system as below.

Item	TOP	External device	Note
Serial Signal Level (port/channel)	RS-232 (COM2)	RS-232 (CH 2)	User set
Station number (PLC Address)	—	0	User set
Serial Baud rate [BPS]	115200		User set
Serial Data bit [Bit]	8		User set
Serial Stop bit [Bit]	1		User set
Serial Parity bit [Bit]	NONE		User set
Run Mode	XGT private server		User set

(1) XDesignerPlus Setting

[Project > Project property] of XDesignerPlus as below and download it to TOP machine.



■ [Project > Project Property > Project > TOP Setting > TOP Name]

Set communication interface of TOP.

The 'Communication Port' dialog box shows settings for two COM ports:

+ COM 1		+ COM 2	
- Boud Rate :	115200	- Boud Rate :	115200
- Data Bit :	8	- Data Bit :	8
- Stop Bit :	1	- Stop Bit :	1
- Parity Bit :	None	- Parity Bit :	None
		- Signal Level :	RS-232C

■ External device setup

Set the communication driver option "XGT(XGK), XGB(XBC,XBM) Series CNET".

The 'PLC Comm Info' dialog box shows the following settings:

- Station Number(PLC): 0
- CPU Type: XGB
- Device Read Type: Continuous

-Station Number : Station number of external device.

-CPU Type : Select CPU type

-Device Read Type : Select protocol type.

(2) External device setup

Run "XG-PD Editor" program for communication setting and set as below.
 If you want to change communication interface, modify refer to PLC manual.

1. Run File > New File". Select CPU Type and push OK button refer to "1. system configuration".
2. Connect CPU LOADER port of XGT Series and serial port of PC by serial cross cable.
 (If there is USB port in CPU, connect USB.)
3. Run [Online] > [Connection settings] menu. Select [Connection settings->Type] and click [Connect] button.
4. Run [Online] > [I/O Information] and read slot number. Run [Online] > [Read Parameter] and read parameter information of slot of communication card.
5. Double click slot of Cnet card in [Project Window], show dialog box of [Default settings].
 Set [Connection] and [Run Mode] as below and click [OK].



Item	Contents	Note	
Connection setting CH 2	Comm. Type	RS-232C	fixation
	Baud rate	115200	User set
	Data bit	8	User set
	Stop bit	1	User set
	Parity bit	NONE	User set
	Modem Type	Null	fixation
	Station No.	0	User set

6. Transfer setting contents to CPU at [Online] > [Write].
7. Reset PLC at [Online] > [Reset PLC].

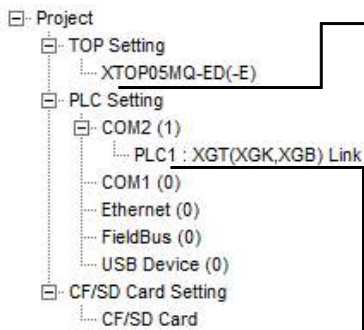
3.10 Example 10

Set your system as below.

Item	TOP	External device	Note
Serial Signal Level (port/channel)	RS-422 (4 wire, COM2)	RS-422 (4 wire, CH 2)	User set
Station number (PLC Address)	—	0	User set
Serial Baud rate [BPS]	115200		User set
Serial Data bit [Bit]	8		User set
Serial Stop bit [Bit]	1		User set
Serial Parity bit [Bit]	NONE		User set
Run Mode	XGT private server		User set

(1) XDesignerPlus Setting

[Project > Project property] of XDesignerPlus as below and download it to TOP machine.



■ [Project > Project Property > Project > TOP Setting > TOP Name]

Set communication interface of TOP.

The 'Communication Port' dialog box shows settings for two COM ports:

- + COM 1**
 - Boud Rate : 115200
 - Data Bit : 8
 - Stop Bit : 1
 - Parity Bit : None
- + COM 2**
 - Boud Rate : 115200
 - Data Bit : 8
 - Stop Bit : 1
 - Parity Bit : None
 - Signal Level : RS-422(4)

■ External device setup

Set the communication driver option "XGT(XGK), XGB(XBC,XBM) Series CNET".

The 'PLC Comm Info' dialog box shows the following settings:

- Station Number(PLC) : 0
- CPU Type : XGB
- Device Read Type : Continuous

-Station Number : Station number of external device.

-CPU Type : Select CPU type

-Device Read Type : Select protocol type.

(2) External device setup

Run "XG-PD Editor" program for communication setting and set as below.

If you want to change communication interface, modify refer to PLC manual.

1. Run File > New File". Select CPU Type and push OK button refer to "1. system configuration".
2. Connect CPU LOADER port of XGT Series and serial port of PC by serial cross cable.
(If there is USB port in CPU, connect USB.)
3. Run [Online] > [Connection settings] menu. Select [Connection settings->Type] and click [Connect] button.
4. Run [Online] > [I/O Information] and read slot number. Run [Online] > [Read Parameter] and read parameter information of slot of communication card.
5. Double click slot of Cnet card in [Project Window], show dialog box of [Default settings].

Set [Connection] and [Run Mode] as below and click [OK].



Item	Contents	Note	
Connection setting CH 2	Comm. Type	RS-422	fixation
	Baud rate	115200	User set
	Data bit	8	User set
	Stop bit	1	User set
	Parity bit	NONE	User set
	Modem Type	Null	fixation
	Station No.	0	User set

6. Transfer setting contents to CPU at [Online] > [Write].
7. Reset PLC at [Online] > [Reset PLC].

3.11 Example 11

Set your system as below.

Item	TOP	External device	Note
Serial Signal Level (port/channel)	RS-485 (2 wire, COM2)	RS-485 (2 wire, CH 2)	User set
Station number (PLC Address)	—	0	User set
Serial Baud rate [BPS]	115200		User set
Serial Data bit [Bit]	8		User set
Serial Stop bit [Bit]	1		User set
Serial Parity bit [Bit]	NONE		User set
Run Mode	XGT private server		User set

(1) XDesignerPlus Setting

[Project >Project property] of XDesignerPlus as below and download it to TOP machine.

■ [Project >Project Property > Project >TOP Setting > TOP Name]
Set communication interface of TOP.

* Communication Port

+ COM 1	+ COM 2
- Boud Rate : 115200	- Boud Rate : 115200
- Data Bit : 8	- Data Bit : 8
- Stop Bit : 1	- Stop Bit : 1
- Parity Bit : None	- Parity Bit : None
	- Signal Level : RS-485(2)

■ External device setup
Set the communication driver option "XGT(XGK), XGB(XBC,XBM) Series CNET".

PLC Comm Info

Station Number(PLC)	0
CPU Type	XGB
Device Read Type	Continuous

- Station Number : Station number of external device.
- CPU Type : Select CPU type
- Device Read Type : Select protocol type.

(2) External device setup

Run "XG-PD Editor" program for communication setting and set as below.
 If you want to change communication interface, modify refer to PLC manual.

1. Run File > New File". Select CPU Type and push OK button refer to "1. system configuration".
2. Connect CPU LOADER port of XGT Series and serial port of PC by serial cross cable.
 (If there is USB port in CPU, connect USB.)
3. Run [Online] > [Connection settings] menu. Select [Connection settings->Type] and click [Connect] button.
4. Run [Online] > [I/O Information] and read slot number. Run [Online] > [Read Parameter] and read parameter information of slot of communication card.
5. Double click slot of Cnet card in [Project Window], show dialog box of [Default settings].
 Set [Connection] and [Run Mode] as below and click [OK].



Item	Contents	Note	
Connection setting CH 2	Comm. Type	RS-485	fixation
	Baud rate	115200	User set
	Data bit	8	User set
	Stop bit	1	User set
	Parity bit	NONE	User set
	Modem Type	Null	fixation
	Station No.	0	User set

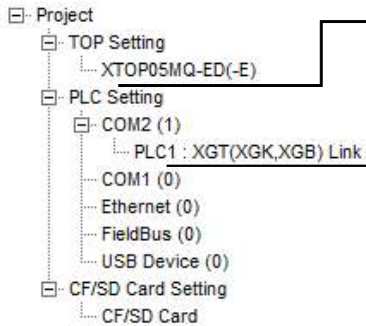
6. Transfer setting contents to CPU at [Online] > [Write].
7. Reset PLC at [Online] > [Reset PLC].

4. Communication setting

Communication setup can be set on XDesignerPlus or TOP Main Menu. The setting should be the same with the external device.

4.1 XDesignerPlus setup

Set [Project >Project property] of XDesignerPlus as below.



■ [Project >Project Property > Project >TOP Setting > TOP Name]

Set communication interface of TOP.

-Right window : [HMI Setting > check HMI Setting using > Device manager]

-Right window : [HMI Setting > check HMI Setting using > PLC setting]

■ External device setup

Set the communication driver option "XGT(XGK), XGB(XBC,XBM) Series CNET"..

■ Setting communication Interface

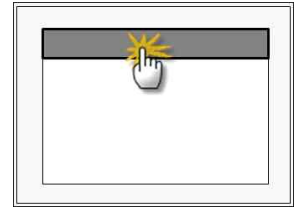
Item	Description
Serial Signal Level	Setup signal level(RS-232C/422/485) of PLC connected with COM2/1 port. (COM1 only RS-232C)
Serial Baud Rate	Setup [communications Baud rate] of PLC connected with COM2/1 port.
Serial Data Bit	Setup [Data Bit] of PLC connected with COM2/1 port.
Serial Stop Bit	Setup [Stop Bit] of PLC connected with COM2/1 port.
Serial Parity Bit	Setup [Parity Bit] of PLC connected with COM2/1 port.
Time Out [x100 mSec]	Setup [Time Out] of PLC connected with COM2/1 port. (Timeout:: waiting time for answer of PLC)
Send Wait [x10 mSec]	Setup [Send Wait] of PLC connected with COM2/1 port. (Send Wait: communicate after waiting setting time when touch screen requires communications.)

Station Num. in Diag.[0~31]

Setup [Station Num.(0~31)] using "4.3 Communication Diagnosis"

4.2 Set TOP Main Menu

- When a buzzer is on during the power reset, touch 1 spot at the upper LCD to move to "TOP Management Main" display.
- Set up driver interface at TOP according to below **Step1** → **Step2**.
(Press "TOP COM 2/1 setup" in **Step 1** to change setup at **Step 2.**)



Step 1. [PLC setup] - Setup driver interface.

PLC setup	
PLC Address : 00 Timeout : 1000 [mSec] Delay time of transmission : 0 [mSec] TOP COM 2/1 : RS - 232C , 115200 , 8 , 1 , NONE <input type="text"/> <input type="text"/> TOP COM 2/1 setup communication test	Communication Interface Settings

Step 1-Reference.

Details	Contents
PLC address [0~65535]	Address of other device. Select between [0 - 65535].
Timeout [x1 mSec]	Set up TOP's response waiting time from external device at [0 – 5000] x 1 mSec.
Delay time of transmission [x1 mSec]	Set up TOP's waiting time between response receiving – next command request transmission from external device at [0 – 5000] x 1 mSec.
TOP COM 2/1	TOP's Interface setup to external device.

Step 2. [PLC setup] >[TOP COM2/COM1 Setting] – Setup relevant port's serial parameter.

Port Settings	
* Serial communication + COM-1 Port - Baud rate : 115200 [BPS] - Data bit : 8 [BIT] - Stop bit : 1 [BIT] - Parity bit : NONE [BIT] - Signal level : RS – 232C	COM 1 Port Communication Interface Settings
+ COM-2 Port - Baud rate : 115200 [BPS] - Data bit : 8 [BIT] - Stop bit : 1 [BIT] - Parity bit : NONE [BIT] - Signal level : RS – 232C	COM-2 Port Communication Interface Settings

Step 2-Reference.

Details	Contents
Baud rate	External device – select serial communication speed between TOPs.
Data bit	External device – select serial communication data bit between TOPs.
Stop bit	External device – select serial communication stop bit between TOPs.
Parity bit	External device – select serial communication parity bit check method between TOPs.
Signal level	External device – select serial communication method between TOPs.

4.3 Communication Diagnosis

- TOP - Confirming interface setting condition between external devices
 - Move to Menu by clicking the top side of LCD screen as resetting the power of TOP.
 - Confirms if Port [COM 2 or COM 1] setting that is willing to use in [Communication Settings] matches with the setting of external devices.

- Port Communication Issue Diagnosis

- PLC Setting > TOP [COM 2 or COM 1] click "Communication Diagnosis" button.
- Diagnosis dialog box will pop up on the screen, you can judge by following information that is shown on box no. 3 section.

OK!	Communication setting normal
Time Out Error!	Abnormal Communication setting. - Error in the setting situation of Cable and TOP / External device (reference : Communication Diagnosis sheet)

- Communication Diagnosis Sheet

- Please refer to the information below if you have a problem between external devices and communication connection.

Designer Version				O.S Version		
Details	Contents				Confirm	
System configuration	Name of CPU				OK	NG
	Name of confront port that is communicating				OK	NG
	System Connection Method	1:1	1:N	N:1	OK	NG
Connection Cable	Name of Cable				OK	NG
PLC setup	Setup address				OK	NG
	Serial baud rate	[BPS]			OK	NG
	Serial data bit	[BIT]			OK	NG
	Serial Stop bit	[BIT]			OK	NG
	Serial parity bit	[BIT]			OK	NG
TOP setup	Assigned Address Limit				OK	NG
	Setup port	COM 1	COM 2		OK	NG
	Name of Driver				OK	NG
	Confront Address	Project Property Setup			OK	NG
		When Diagnosing Communication			OK	NG
	Serial baud rate	[BPS]			OK	NG
	Serial data bit	[BIT]			OK	NG
	Serial Stop bit	[BIT]			OK	NG
Serial parity bit	[BIT]			OK	NG	

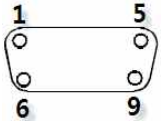
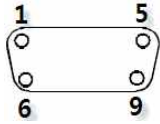
5. Cable diagram

This Chapter introduces cable wiring guidance for communication between TOP and PLC concerned. (The cable diagrams in this section may differ from the recommendations of LS Industrial Systems Co., Ltd)

5.1 Cable Diagram Table 1

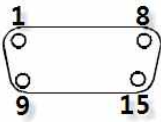
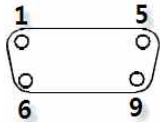
■ 1 : 1 Connection

(A) XTOP COM 2port(9pin)

XTOP COM2			Cable Wiring	PLC		
Pin Assignment *1	Signal	Pin No.		Pin No.	Signal	Pin Assignment *1
 <p>Front View of D-SUB 9 Pin (male, convex)</p>	CD	1	1	CD	 <p>Front View of, D-SUB 9 Pin (male, convex)</p>	
	RD	2	2	RD		
	SD	3	3	SD		
	DTR	4	4	DTR		
	SG	5	5	SG		
	DSR	6	6	DSR		
	RTS	7	7	RTS		
	CTS	8	8	CTS		
		9	9			

*1) Pin assignment of the cable connector is seen on the face of Front View.

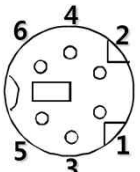
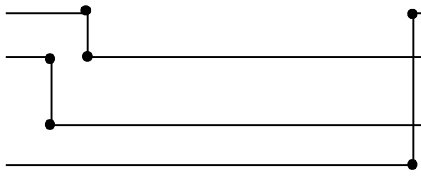
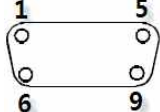
(B) XTOP COM 2 port(15pin)

XTOP COM2			Cable Wiring	PLC		
Pin Assignment *1	Signal	Pin No.		Pin No.	Signal	Pin Assignment *1
 <p>Front View of D-SUB 15 Pin (male, convex)</p>	CD	1	1	CD	 <p>Front View of, D-SUB 9 Pin (male, convex)</p>	
	RD	2	2	RD		
	SD	3	3	SD		
	DTR	4	4	DTR		
	SG	5	5	SG		
	DSR	6	6	DSR		
	RTS	7	7	RTS		
	CTS	8	8	CTS		
		9	9			

*1) Pin assignment of the cable connector is seen on the face of Front View.

(C) XTOP/ATOP COM 1 port (6pin)

XTOP/ATOP COM 1 port			Cable Wiring	PLC		
Pin Assignment *1	Signal	Pin No.		Pin No.	Signal	Pin Assignment *1

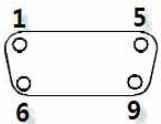
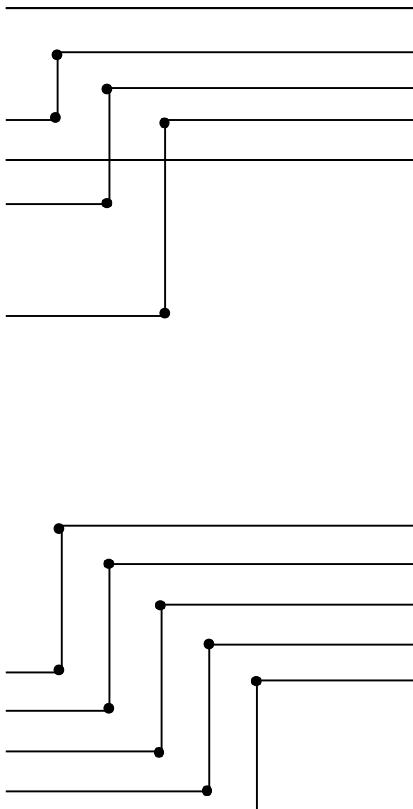
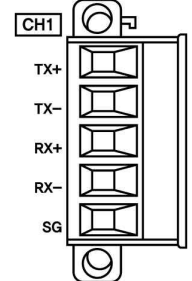
 <p>Front View of D-SUB 6 Pin (male, convex)</p>		1		1	CD	 <p>Front View of, D-SUB 9 Pin (male, convex)</p>
	RD	2		2	RD	
	SG	3		3	SD	
		4		4	DTR	
		5		5	SG	
	SD	6		6	DSR	
			7	RTS		
			8	CTS		
			9			

*1) Pin assignment of the cable connector is seen on the face of Front View.

5.2 Cable Diagram Table 2

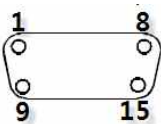

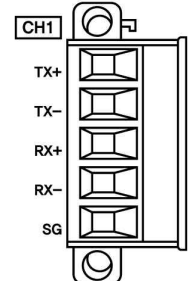
■ 1 : 1 connection

(A) XTOP COM 2 port(9pin)

XTOP COM2			Cable Wiring	PLC	
Pin Assignment *1	Signal	Pin No.		Signal	Pin Assignment
 <p>Front View of D-SUB 9 Pin (male, convex)</p>	RDA	1		TX+	
		2		TX-	
		3		RX+	
	RDB	4		RX-	
	SG	5		SG	
	SDA	6			
		7			
		8			
	SDB	9			

*1) Pin assignment of the cable connector is seen on the face of Front View.

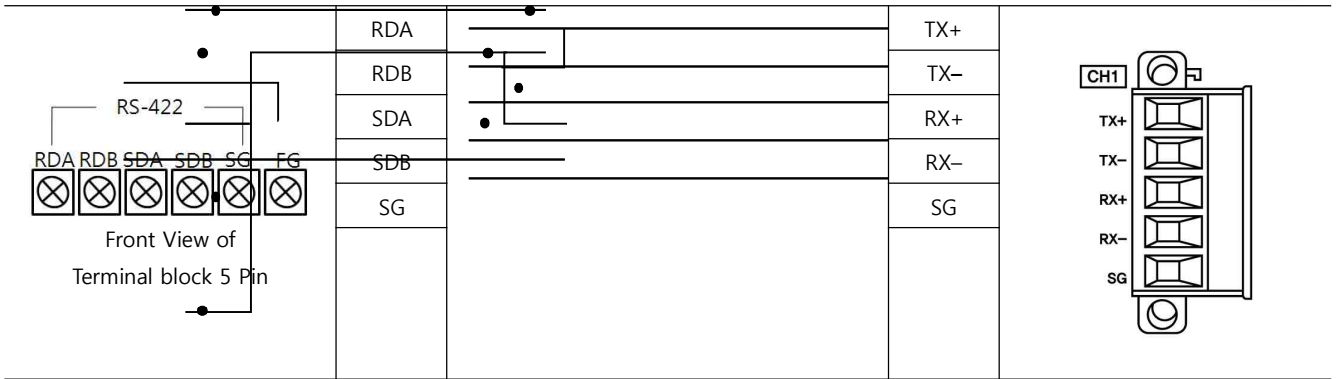
(B) XTOP COM 2 port(15pin)

XTOP COM2			Cable Wiring	PLC		
Pin Assignment *1	Signal	Pin No.		Signal	Pin Assignment	
 <p>Front View of D-SUB 15 Pin (male, convex)</p>	-	1		TX+		
	(skip)					TX-
						RX+
	-			10		RX-
	RDA			11		SG
	RDB			12		
	SDA			13		
	SDB			14		
	SG			15		

*1) Pin assignment of the cable connector is seen on the face of Front View.

(C) ATOP COM 2 port (Terminal block 5 pin)

ATOP COM2		Cable Wiring	PLC	
Pin Assignment *1	Signal		Signal	Pin Assignment



*1) Pin assignment of the cable connector is seen on the face of Front View.1

■ 1 : N connection – Connect as below refer to 1:1 connection.

TOP
Signal
RDA
RDB
SDA
SDB
SG

Direction of cable connection and signal

PLC
Signal
TX+
TX-
RX+
RX-
SG

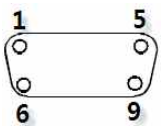
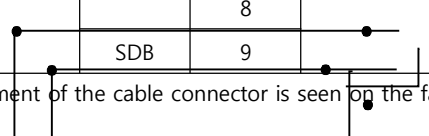
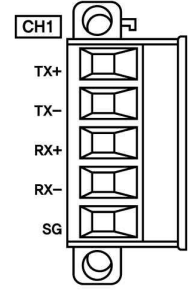
Direction of cable connection and signal

PLC
Signal
TX+
TX-
RX+
RX-
SG

5.3 Cable Diagram Table 3

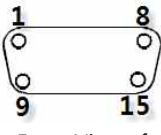
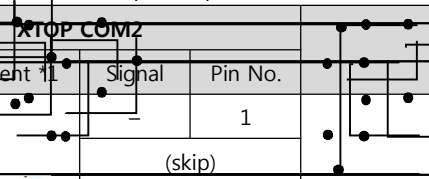
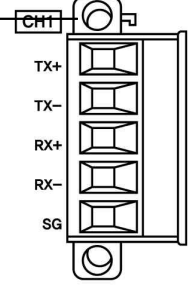
■ 1 : 1 connection

(A) XTOP COM 2 port(9pin)

XTOP COM2			Cable Wiring	PLC	
Pin Assignment *1	Signal	Pin No.		Signal	Pin Assignment
 <p>Front View of D-SUB 9 Pin (male, convex)</p>	RDA	2		TX+	
		3		TX-	
	RDB	4		RX+	
	SG	5		RX-	
	SDA	6		SG	
		7			
		8			
	SDB	9			

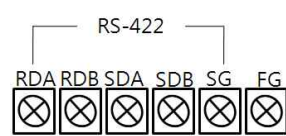
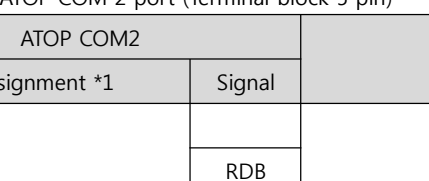
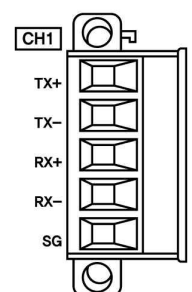
*1) Pin assignment of the cable connector is seen on the face of Front View.

(B) XTOP COM 2 port(15pin)

XTOP COM2			Cable Wiring	PLC		
Pin Assignment *1	Signal	Pin No.		Signal	Pin Assignment	
 <p>Front View of D-SUB 15 Pin (male, convex)</p>		1		TX+		
		(skip)				TX-
				10		RX+
	RDA					RX-
	RDB			12		SG
	SDA			13		
	SDB			14		
SG		15				

11 *1) Pin assignment of the cable connector is seen on the face of Front View. RDARDA

(C) ATOP COM 2 port (Terminal block 5 pin)

ATOP COM2		Cable Wiring	PLC		
Pin Assignment *1	Signal		Signal	Pin Assignment	
 <p>Front View of Terminal block 5 Pin</p>			TX+		
			RDB		TX-
			SDA		RX+
			SDB		RX-
			SG		SG

*1) Pin assignment of the cable connector is seen on the face of Front View.

■ 1 : N / N : 1 connection – Connect as below refer to 1:1 connection.



Signal
RDB
SDA
SDB
SG

cable connection and signal



Signal
TX+
TX-
RX+
RX-
SG

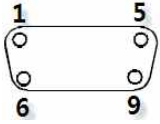
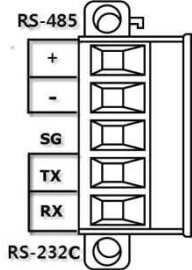
cable connection and signal

Signal
TX+
TX-
RX+
RX-
SG

5.4 Cable Diagram Table 4

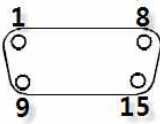
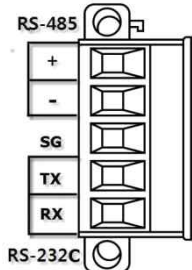
■ 1 : 1 connection

(A) XTOP COM 2 port(9pin)

XTOP COM2			Cable Wiring	PLC		
Pin Assignment *1	Signal	Pin No.		Signal	Pin Assignment	
 <p>Front View of D-SUB 9 Pin (male, convex)</p>	CD	1		+		
				2		-
	RD					
	SD		3	SG		
	DTR		4	TX		
	SG		5	RX		
	DSR		6			
	RTS		7			
	CTS		8			
		9				

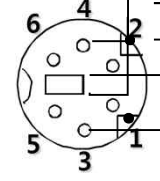
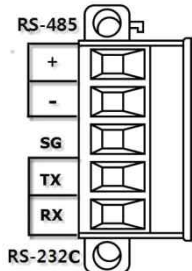
*1) Pin assignment of the cable connector is seen on the face of Front View.

(B) XTOP COM 2 port(15pin)

XTOP COM2			Cable Wiring	PLC		
Pin Assignment *1	Signal	Pin No.		Signal	Pin Assignment	
 <p>Front View of D-SUB 15 Pin (male, convex)</p>	CD	1		+		
				2		-
	SD		3	SG		
	DTR		4	TX		
	SG		5	RX		
	DSR		6			
	RTS		7			
	CTS		8			
			9			

*1) Pin assignment of the cable connector is seen on the face of Front View.

(C) XTOP/ATOP COM 1 port(6pin)

XTOP/ATOP COM 1 port			Cable Wiring	PLC		
Pin Assignment *1	Signal	Pin No.		Signal	Pin Assignment	
 <p>Front View of D-SUB 6 Pin (male, convex)</p>				+		
				1		-
	RD		2			
	SG		3	SG		
			4	TX		
		5	RX			

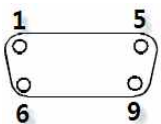
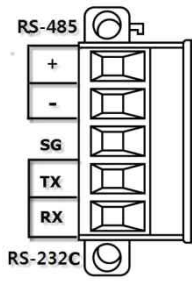
	SD	6			

*1) Pin assignment of the cable connector is seen on the face of Front View.11

5.5 Cable Diagram Table 5

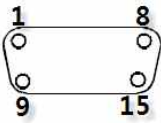
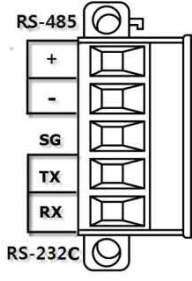
■ 1 : 1 connection

(A) XTOP COM 2 port(9pin)

XTOP COM2			Cable Wiring	PLC	
Pin Assignment *1	Signal	Pin No.		Signal	Pin Assignment
 <p>Front View of D-SUB 9 Pin (male, convex)</p>	RDA		•	+	
		2		-	
		3		SG	
	RDB	4		TX	
	SG	5		RX	
	SDA	6			
		7			
		8			
	SDB	9			

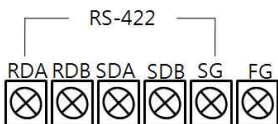
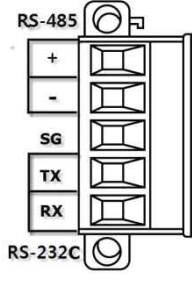
*1) Pin assignment of the cable connector is seen on the face of Front View.

(B) XTOP COM 2 port(15pin)

XTOP COM2			Cable Wiring	PLC		
Pin Assignment *1	Signal	Pin No.		Signal	Pin Assignment	
 <p>Front View of D-SUB 15 Pin (male, convex)</p>	-		• •	+		
		(skip)				-
				10		SG
	RDA	11		TX		
	RDB	12		RX		
	SDA	13				
	SDB	14				
				15		
	SG	15				

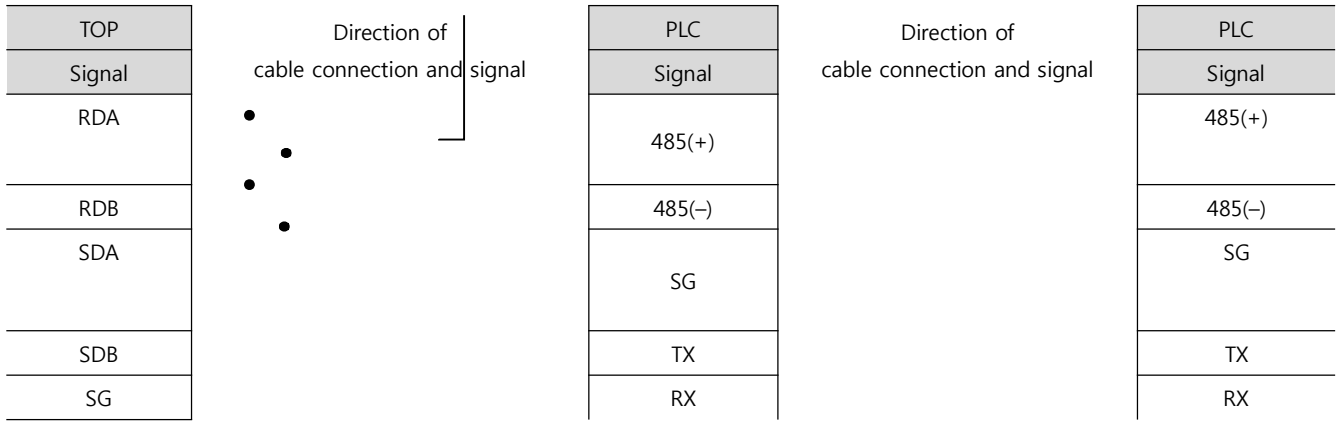
*1) Pin assignment of the cable connector is seen on the face of Front View.

(C) ATOP COM 2 port (Terminal block 5 pin)

ATOP COM2		Cable Wiring	PLC	
Pin Assignment *1	Signal		Signal	Pin Assignment
 <p>Front View of Terminal block 5 Pin</p>	RDA	•	+	
	RDB		-	
	SDA		SG	
	SDB		TX	
	SG		RX	

*1) Pin assignment of the cable connector is seen on the face of Front View.

■ 1 : N / N : 1 connection – Connect as below refer to 1:1 connection.



6. Available Address

The available address of device are as below.

Device(address) range might be different according to series/type of CPU. TOP Series are capable of supporting maximum address range which is available in external Device.

Be careful get out of address range.

Device	Bit Address	Word Address	32 Bit	Property
Input / Output Relay	P00000 – P2047F	P0000 – P2047	L/H ^{*1)}	R/W
Auxiliary Relay	M00000 – M2047F	M0000 – M2047		R/W
Keep Relay	K00000 – K2047F	K0000 – K2047		R/W
Link Relay	L000000 – L11263F	L00000 – L11263		R/W
Special Relay	F00000 – F2047F	F0000 – F2047		R
Timer (Contact)	T0000 – T2047	—————		R/W
Counter (Contact)	C0000 – C2047	—————		R/W
Timer (Current Value)	—————	T0000 – T2047		R/W
Counter (Current Value)	—————	C0000 – C2047		R/W
Data Register	D00000.00 – D65535.15	D00000 – 65535		R/W
Communication Data Register	N00000.00 – D65535.15	N00000 – N21503		R/W
File Register	R00000.00 – R32767.15	R00000 – R32767		R/W
File Register	ZR00000.00 – ZR65535.15	ZR00000 – ZR65535		R/W

R:read / W:write

*1) Low 16BIT of 32BIT data is saved address input by touch program, high 16Bit of 32BIT data is saved next address input by touch program.

(Ex) If you input [12345678] of hex 32bit data at address [D00100], it will save in 16bit device as below.

Item	32BIT	16BIT	
	address	D00100	D00101
Input data(Hex)	12345678	5678	1234