MITSUBISHI Electric Corporation
MELSEC-Q Series
SERIAL(QJ71C24, Format 1) Driver

Compatible version	OS	Over 4.0
	XDesignerPlus	Over 4.0.0.0

CONTENTS

Thank you for using M2I's "Touch Operation Panel(M2I TOP) Series". Please read out this manu al and make sure to learn connection method and process of "TOP – External device"

1. System configuration

The System configuration of TOP and "MITSUBISHI Electric Corporation - MELSEC-A(A2N/A3N) SERIES CPU DIRECT" is as below.

Series	CPU	Link I/F	Method	System settings	Cable
MELSEC-Q	Q02CPU Q02HCPU Q06HCPU Q12HCPU Q25HCPU Q00JCPU Q00CPU Q01CPU Q01UCPU Q02UCPU Q03UDCPU Q04UDHCPU Q06UDHCPU Q00UJCPU Q00UCPU Q01UCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU	In case if Channel 1 (ch1) is used			
		QJ71C24 *caution1) QJ71C24-R2 *caution1) QJ71C24N QJ71C24N-R2	RS-232C		
		QJ71C24 *caution1) QJ71C24-R4 QJ71C24N QJ71C24N-R4	RS-422 (4 wire) RS-485 (2 wire)		
		In case if Channel2 (ch2) is used			
		QJ71C24-R2 *caution1) QJ71C24N-R2	RS-232C		
		QJ71C24 *caution1) QJ71C24-R4 QJ71C24N QJ71C24N-R4	RS-422 (4 wire) RS-485 (2 wire)		
	Q00CPU Q01CPU	CPU Direct Port	RS-232C		

*Caution1) In case if it is the **"QJ71C24"/ "QJ71C24-R2"** communication module, please refer to the list below.

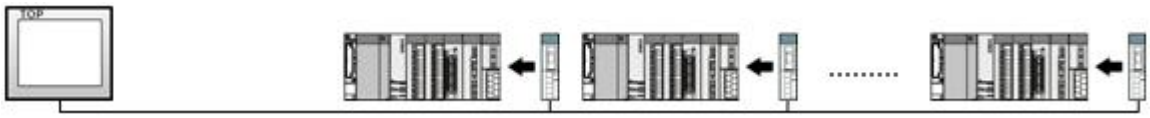
(1) If you use communication card, please set the total sum of communication speed of channel 1(CH1), channel2(CH2) less than **115200[BPS]**.

(2) It is not compatible with Q□□UDE□ CPU.

■ Connection configuration

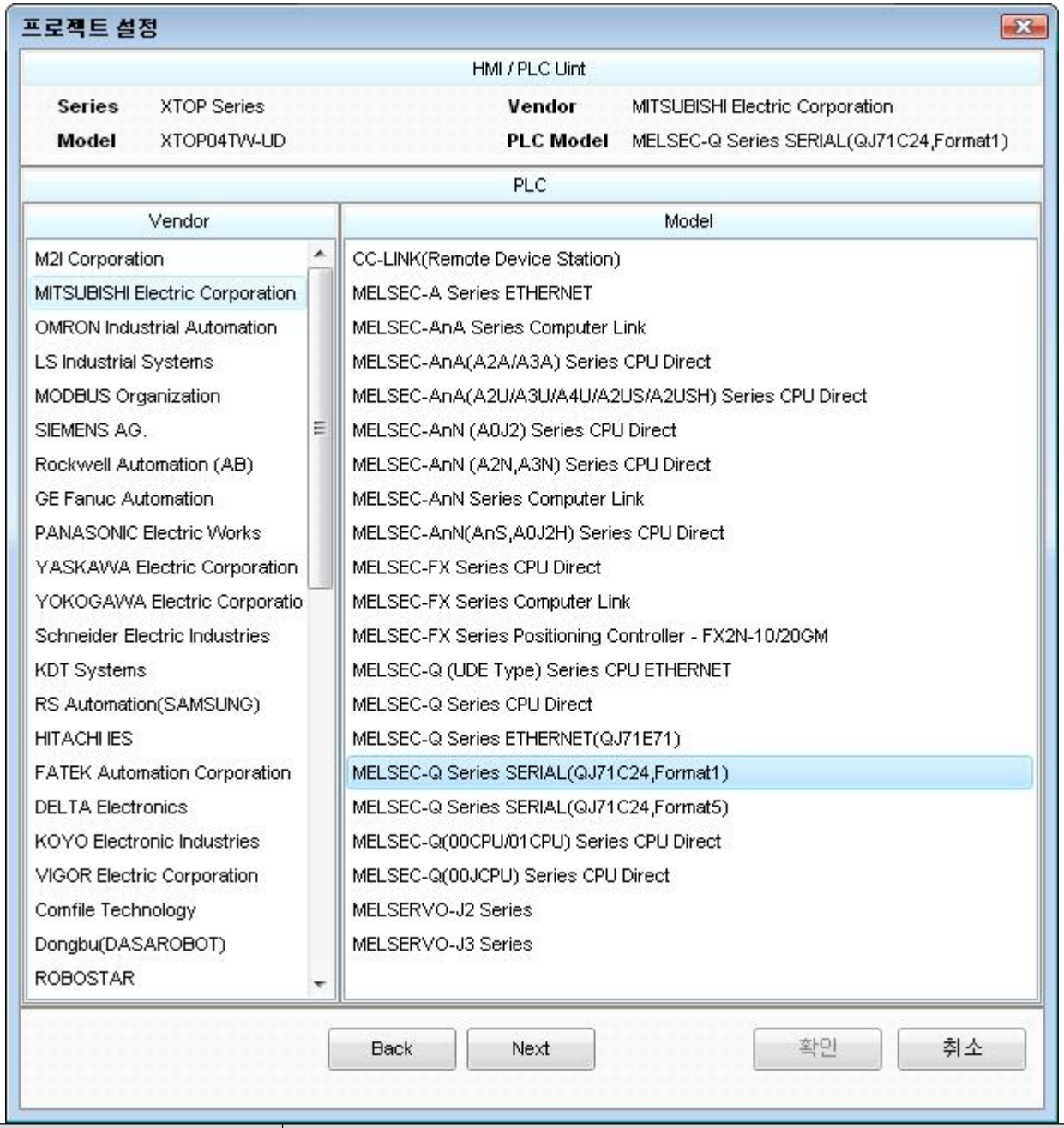
・1 : 1(1 TOP and 1 External Device) Connection - it is for RS232C/422/485 communication.

・1 : N(1 TOP and Several External Devices) Connection - It is for RS422/485 Communication.



2. Selecting TOP model and external devices

Select the external devices to connect to TOP.



Setting details		Contents
TOP	Series	Select the name of a TOP series that is to be connected to PLC. Before downloading the settings, install the OS version specified in the table below according to TOP series. Series: XTOP / HTOP — Version name: V4.0
	Name	Select the model name of TOP product.
Communication Device	Manufacturer	Select the manufacturer of external devices to be connected to TOP. Please select "MITSUBISHI".
	PLC	Select the model series of external devices to be connected to TOP. Please select "MELSEC-Q Series SERIAL(QJ71C24, Format1) ". Please check, in the "1. System configuration", if the relevant external device is available to set a

		system configuration.

3. Example of system settings

Regarding of communication interface settings in TOP and external devices, we suggest as below.

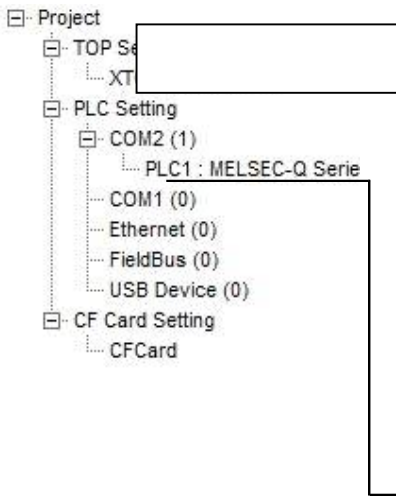
3.1 Example of settings 1

The system is set as below.

Details		TOP	MELSEC-Q Series	Remark
Serial level (port/channel)		RS-232C (COM2)	RS-232 Channel 1(CH 1)	User settings
Address(PLC Address)		—	0	User settings
Serial baud rate	[BPS]	38400		User settings
Serial data bit	[Bit]	8		User settings
Serial stop bit	[Bit]	1		User settings
Serial parity bit	[Bit]	NONE		User settings
MC 프로토콜		FORMAT 1 (3C FRAME FORMAT1 ASCII)		User settings

(1) XDesignerPlus setup

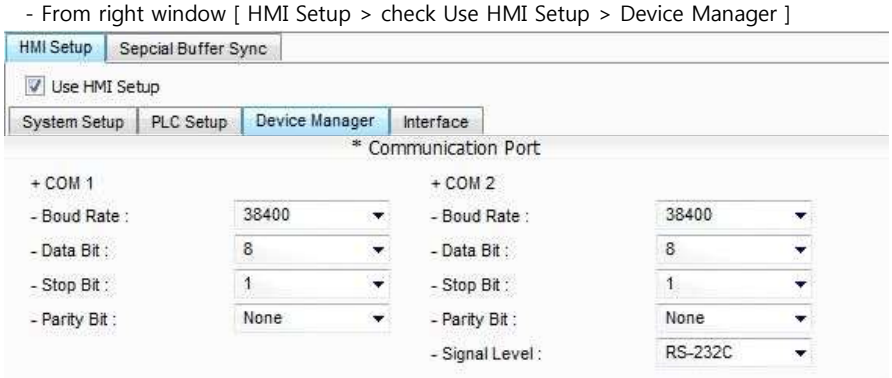
After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.



■ [Project > Project property > Project > Settings > TOP Name]

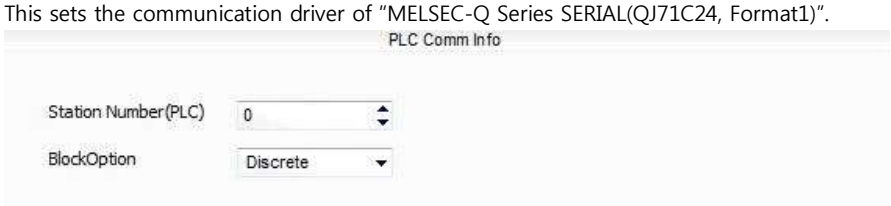
Set the communication interface of TOP tool.

- From right window [HMI Setup > check Use HMI Setup > Device Manager]



■ External device settings

This sets the communication driver of "MELSEC-Q Series SERIAL(QJ71C24, Format1)".



- PLC address (PLC) : External device setting address
- Block process method : Choose protocol method.

(2) External device settings

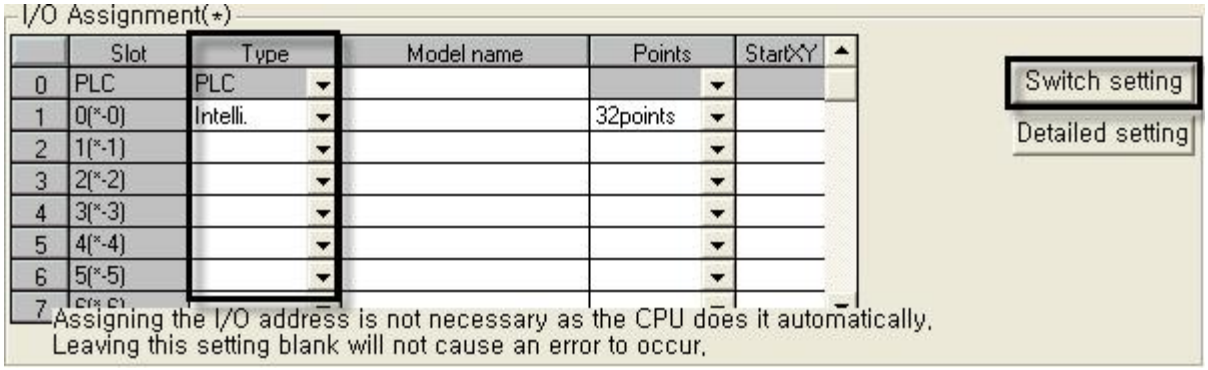
Please set up using MELSEC series Ladder Software "GX Developer" as below. Please refer the PLC user manual for more detailed information if you need.

> If you use "**QJ71C24**" or "**QJ71C24-R2**" communication card, please set the total sum of communication speed of channel 1(CH1), channel2(CH2) less than **115200**[BPS].

1. From "GX Developer" project window, double click[Parameter] > [PLC parameter] to pop up [Q parameter setting] Dialog Box.

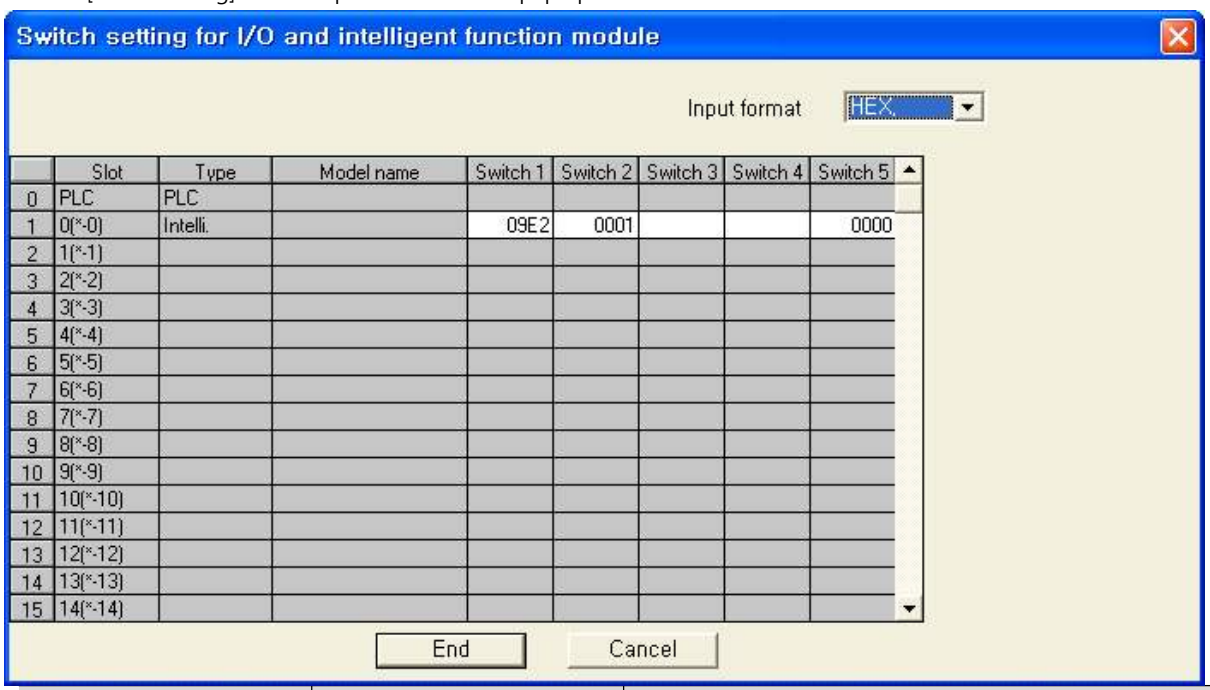
2. Please select [Q parameter setting] Dialog Box에서 [I/O Assignment] tab.

3. Please set the [type] which the communication module is installed to "**Intelligent**" from [I/O Assignment(*)] box.



(caution) The picture above is when communication module is installed at slot number 0.

4. Click [Switch setting] and set up as below on the pop up window.



Switch	Setting value	Setting details
Switch 1	05E2	9600 / 8 / 1 / NONE
	07E2	19200 / 8 / 1 / NONE
	09E2	38400 / 8 / 1 / NONE
	0BE2	115200 / 8 / 1 / NONE
Switch 2	5	FORMAT 5(4C FRAME FORMAT5 BINARY)
Switch 5	0	Set to "0" on address of Communication module (Channel 1, Channel 2).

In case of the Channel1, write the contents of the Switch1 and the Switch2 to the Switch3 and the Switch4.

※ Recommend the example of the setting contents

5. Please reset PLC after sending parameters that has been set from [Online] > [Write to PLC].

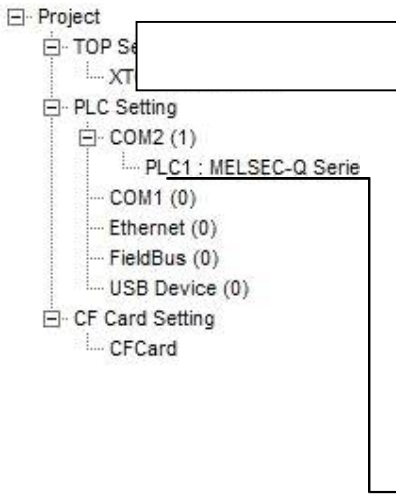
3.2 Example of Settings 2

The system is set as below.

Details		TOP	MELSEC-Q Series	Remark
Serial level (port/channel)		RS-422 (4 wire, COM2)	RS-422 Channel 1(CH 1)	User settings
Address(PLC Address)		—	0	User settings
Serial baud rate	[BPS]	38400		User settings
Serial data bit	[Bit]	8		User settings
Serial stop bit	[Bit]	1		User settings
Serial parity bit	[Bit]	NONE		User settings
MC Protocol		FORMAT 1 (3C FRAME FORMAT1 ASCII)		User settings

(1) XDesignerPlus setup

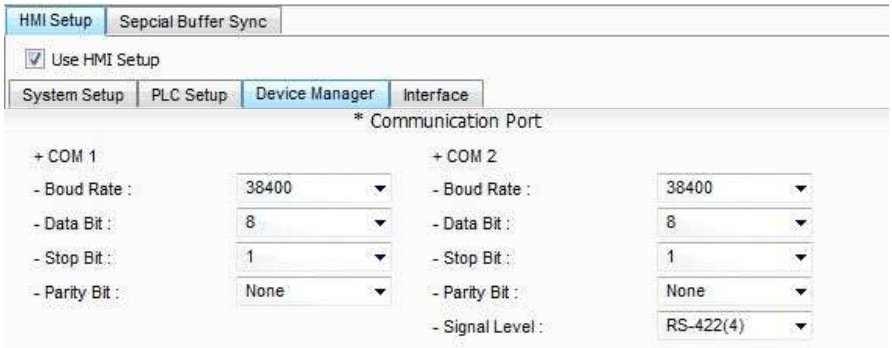
After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.



■ [Project > Project property > Project > Settings > TOP Name]

Set the communication interface of TOP tool.

- From right window [HMI Setup > check Use HMI Setup > Device Manager]



■ External device settings

This sets the communication driver of "MELSEC-Q Series SERIAL(QJ71C24, Format1)".

- PLC address (PLC) : External device setting address
- Block process method : Choose protocol method.

(2) External device settings

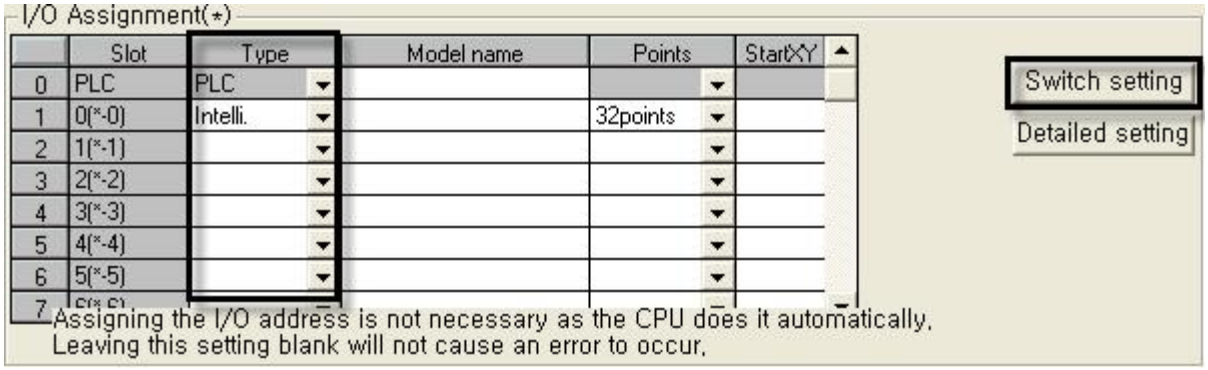
Please set up using MELSEC series Ladder Software "GX Developer" as below. Please refer the PLC user manual for more detailed information if you need.

> If you use "**QJ71C24**" or "**QJ71C24-R2**" communication card, please set the total sum of communication speed of channel 1(CH1), channel2(CH2) less than **115200**[BPS].

1. From "GX Developer" project window, double click[Parameter] > [PLC parameter] to pop up [Q parameter setting] Dialog Box.

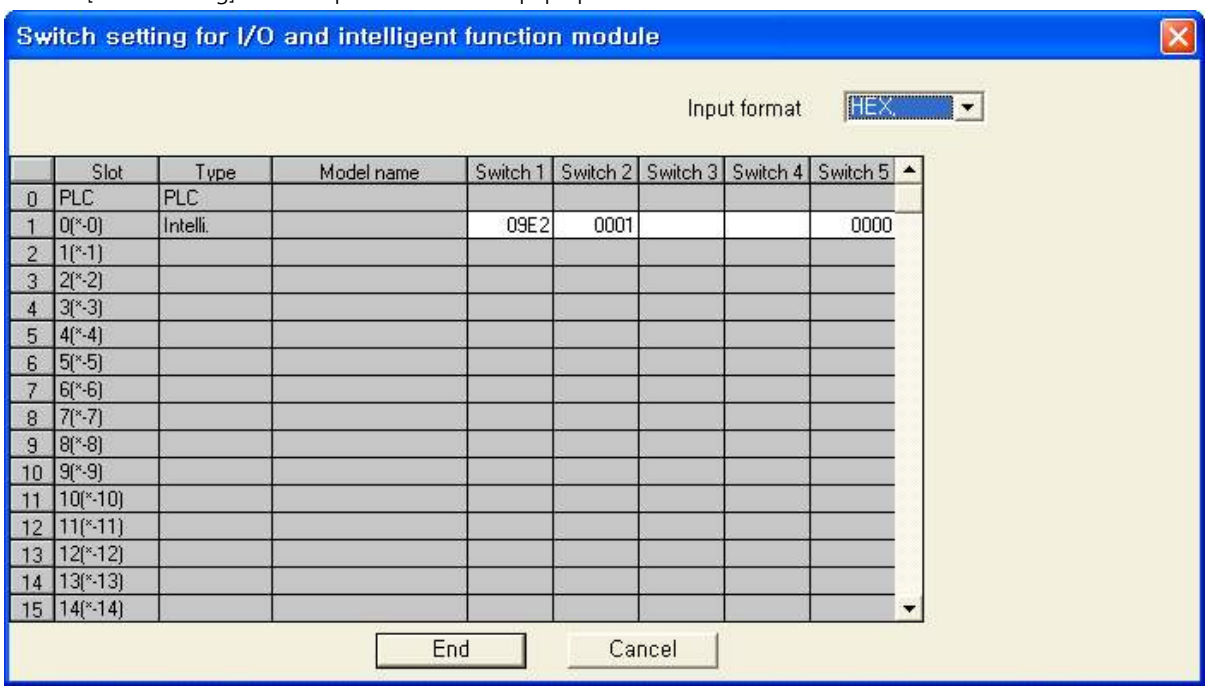
2. Please select [Q parameter setting] Dialog Box에서 [I/O Assignment] tab.

3. Please set the [type] which the communication module is installed to "Intelligent" from [I/O Assignment(*)] box.



(caution) The picture above is when communication module is installed at slot number 0.

4. Click [Switch setting] and set up as below on the pop up window.



Switch	Setting value	Setting details
Switch 1	05E2	9600 / 8 / 1 / NONE
	07E2	19200 / 8 / 1 / NONE
	09E2	38400 / 8 / 1 / NONE
	0BE2	115200 / 8 / 1 / NONE
Switch 2	5	FORMAT 5(4C FRAME FORMAT5 BINARY)
Switch 5	0	Set to "0" on address of Communication module (Channel 1, Channel 2).

In case of the Channel1, write the contents of the Switch1 and the Switch2 to the Switch3 and the Switch4.

※ Recommend the example of the setting contents

5. Please reset PLC after sending parameters that has been set from [Online] > [Write to PLC].

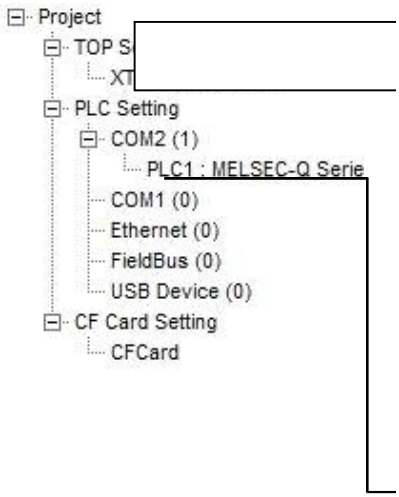
3.3 Examples of Setting 3

The system is set as below.

Details		TOP	MELSEC-Q Series	Remark
Serial level (port/channel)		RS-485 (2 wire, COM2)	RS-485 Channel 1(CH 1)	User settings
Address(PLC Address)		—	0	User settings
Serial baud rate	[BPS]	38400		User settings
Serial data bit	[Bit]	8		User settings
Serial stop bit	[Bit]	1		User settings
Serial parity bit	[Bit]	NONE		User settings
MC Protocol		FORMAT 1 (3C FRAME FORMAT1 ASCII)		User settings

(1) XDesignerPlus setup

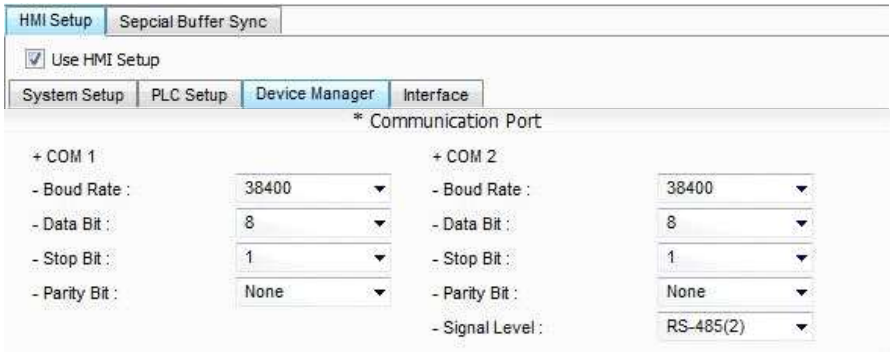
After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.



■ [Project > Project property > Project > Settings > TOP Name]

Set the communication interface of TOP tool.

- From right window [HMI Setup > check Use HMI Setup > Device Manager]



■ External device settings

This sets the communication driver of "MELSEC-Q Series SERIAL(QJ71C24, Format1)".

- PLC address (PLC) : External device setting address
- Block process method : Choose protocol method.

(2) External device settings

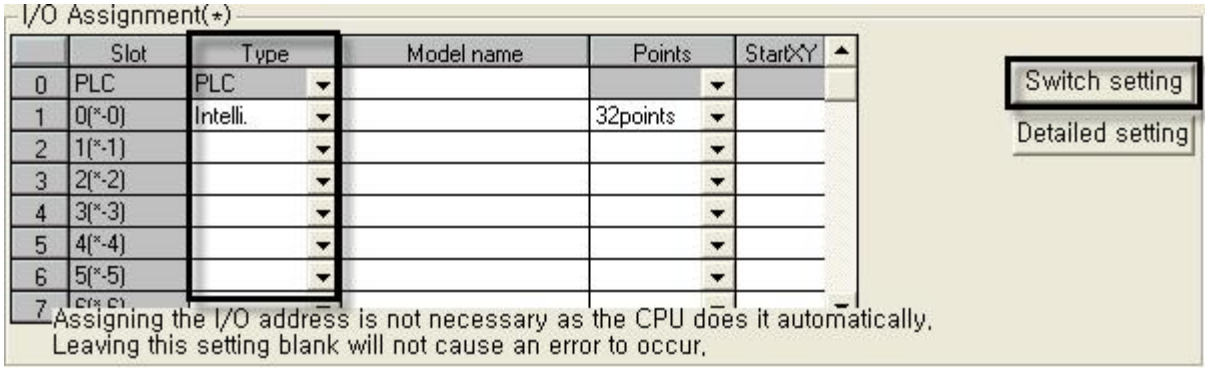
Please set up using MELSEC series Ladder Software "GX Developer" as below. Please refer the PLC user manual for more detailed information if you need.

> If you use "**QJ71C24**" or "**QJ71C24-R2**" communication card, please set the total sum of communication speed of channel 1(CH1), channel 2(CH2) less than **115200**[BPS].

1. From "GX Developer" project window, double click [Parameter] > [PLC parameter] to pop up [Q parameter setting] Dialog Box.

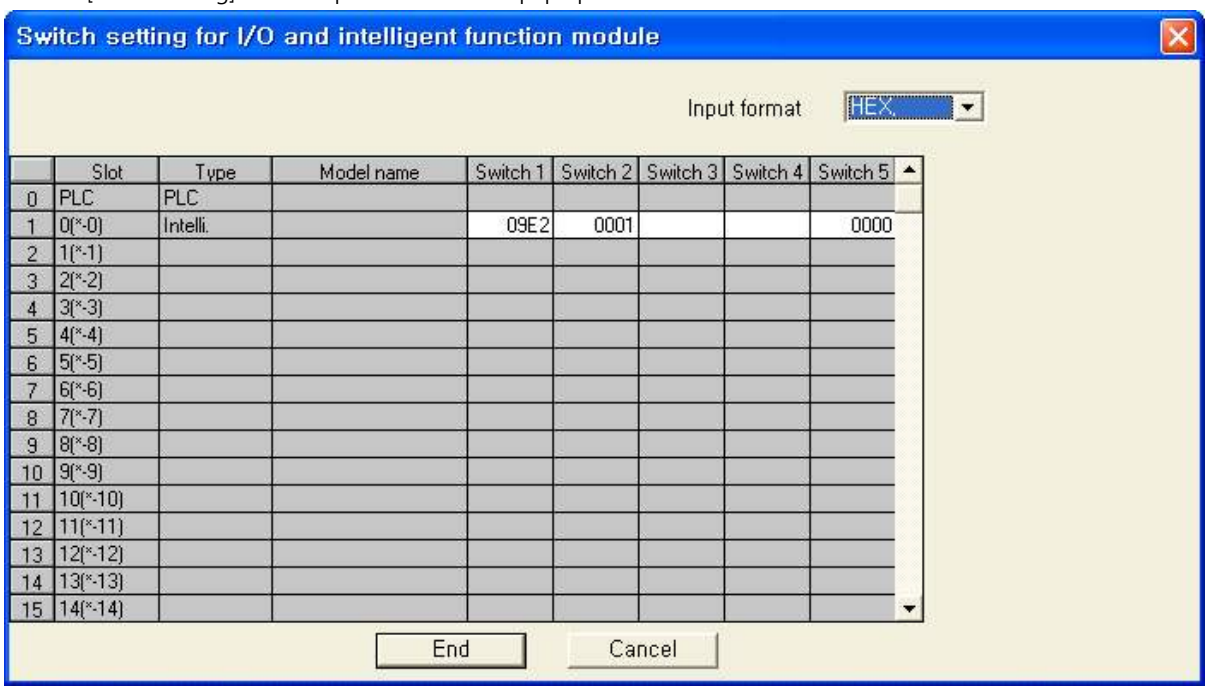
2. Please select [Q parameter setting] Dialog Box에서 [I/O Assignment] tab.

3. Please set the [type] which the communication module is installed to "**Intelligent**" from [I/O Assignment(*)] box.



(caution) The picture above is when communication module is installed at slot number 0.

4. Click [Switch setting] and set up as below on the pop up window.



Switch	Setting value	Setting details
Switch 1	05E2	9600 / 8 / 1 / NONE
	07E2	19200 / 8 / 1 / NONE
	09E2	38400 / 8 / 1 / NONE
	0BE2	115200 / 8 / 1 / NONE
Switch 2	5	FORMAT 5(4C FRAME FORMAT5 BINARY)
Switch 5	0	Set to "0" on address of Communication module (Channel 1, Channel 2).

In case of the Channel1, write the contents of the Switch1 and the Switch2 to the Switch3 and the Switch4.

※ Recommend the example of the setting contents

5. Please reset PLC after sending parameters that has been set from [Online] > [Write to PLC].

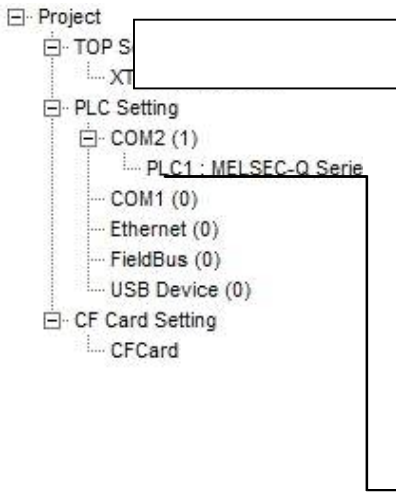
3.4 Examples of Setting 4

The system is set as below.

Details		TOP	MELSEC-Q Series	Remark
Serial level (port/channel)		RS-232C (COM2)	RS-232 Channel 2(CH 2)	User settings
Address(PLC Address)		—	0	User settings
Serial baud rate	[BPS]	38400		User settings
Serial data bit	[Bit]	8		User settings
Serial stop bit	[Bit]	1		User settings
Serial parity bit	[Bit]	NONE		User settings
MC Protocol		FORMAT 1 (3C FRAME FORMAT1 ASCII)		User settings

(1) XDesignerPlus setup

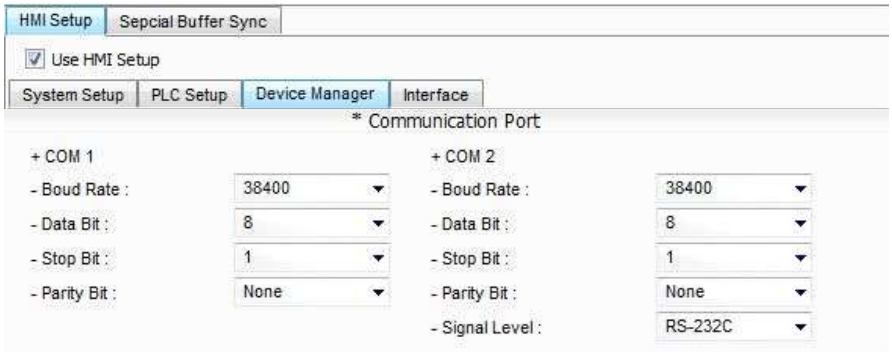
After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.



■ [Project > Project property > Project > Settings > TOP Name]

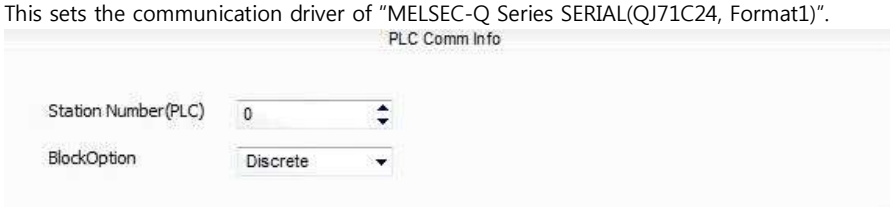
Set the communication interface of TOP tool.

- From right window [HMI Setup > check Use HMI Setup > Device Manager]



■ External device settings

This sets the communication driver of "MELSEC-Q Series SERIAL(QJ71C24, Format1)".



- PLC address (PLC) : External device setting address
- Block process method : Choose protocol method.

(2) External device settings

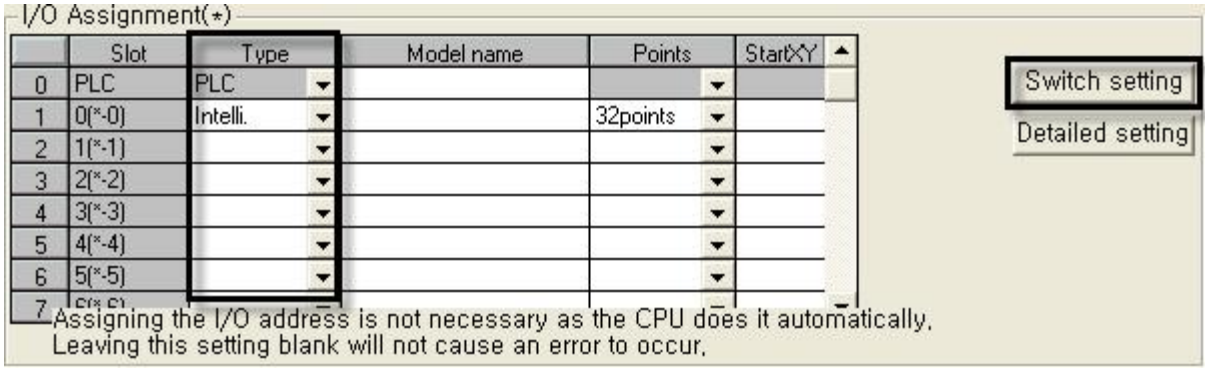
Please set up using MELSEC series Ladder Software "GX Developer" as below. Please refer the PLC user manual for more detailed information if you need.

> If you use "**QJ71C24**" or "**QJ71C24-R2**" communication card, please set the total sum of communication speed of channel 1(CH1), channel 2(CH2) less than **115200**[BPS].

1. From "GX Developer" project window, double click[Parameter] > [PLC parameter] to pop up [Q parameter setting] Dialog Box.

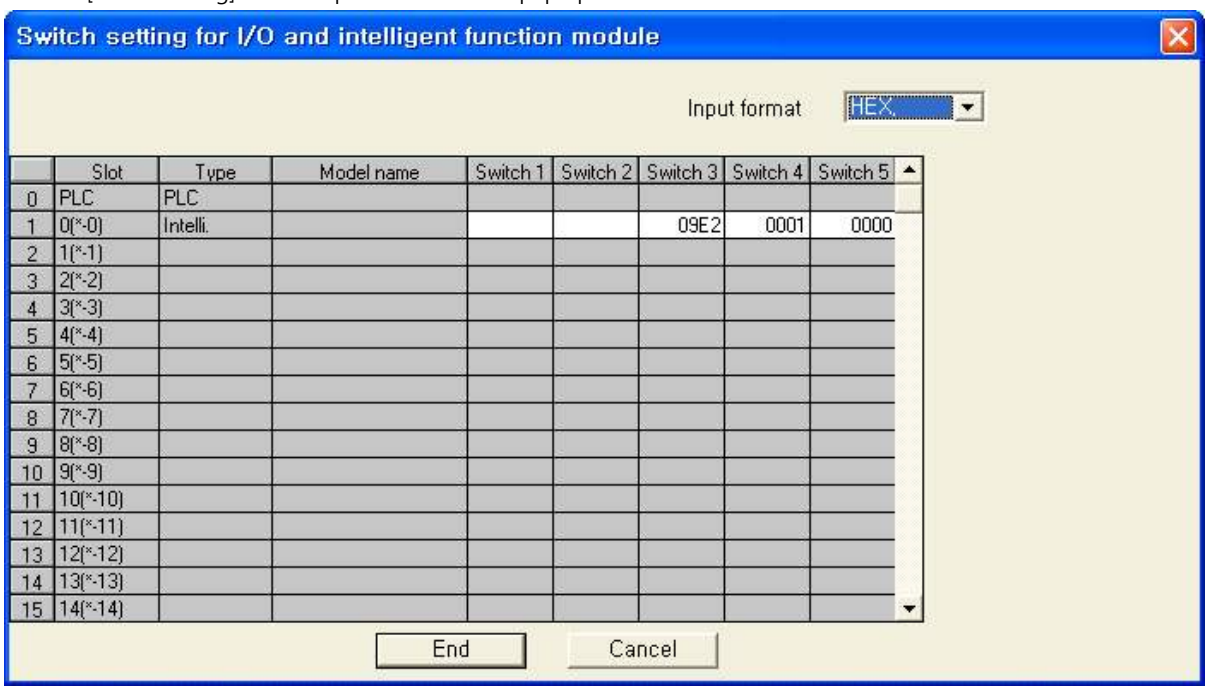
2. Please select [I/O Assignment] tab in the [Q parameter setting] Dialog Box.

3. Please set the [type] which the communication module is installed to "**Intelligent**" from [I/O Assignment(*)] box.



(Caution) The picture above is when communication module is installed at slot number 0.

4. Click [Switch setting] and set up as below on the pop up window.



Switch	Setting value	Setting details
Switch 1	05E2	9600 / 8 / 1 / NONE
	07E2	19200 / 8 / 1 / NONE
	09E2	38400 / 8 / 1 / NONE
	0BE2	115200 / 8 / 1 / NONE
Switch 2	5	FORMAT 5(4C FRAME FORMAT5 BINARY)
Switch 5	0	Set to "0" on address of Communication module (Channel 1, Channel 2).

In case of the Channel1, write the contents of the Switch1 and the Switch2 to the Switch3 and the Switch4.

※ Recommend the example of the setting contents

5. Please reset PLC after sending parameters that has been set from [Online] > [Write to PLC].

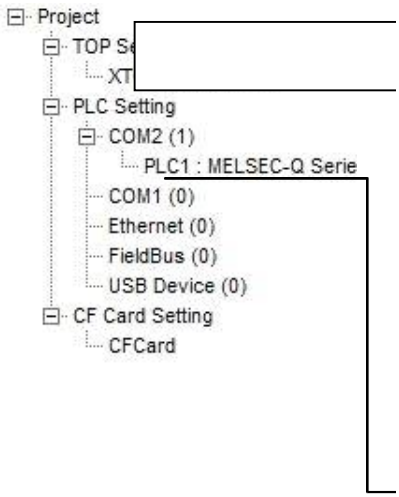
3.5 Examples of Setting 5

The system is set as below.

Details		TOP	MELSEC-Q Series	Remark
Serial level (port/channel)		RS-422 (4 wire, COM2)	RS-422 Channel 2(CH 2)	User settings
Address(PLC Address)		—	0	User settings
Serial baud rate	[BPS]	38400		User settings
Serial data bit	[Bit]	8		User settings
Serial stop bit	[Bit]	1		User settings
Serial parity bit	[Bit]	NONE		User settings
MC Protocol		FORMAT 1 (3C FRAME FORMAT1 ASCII)		User settings

(1) XDesignerPlus setup

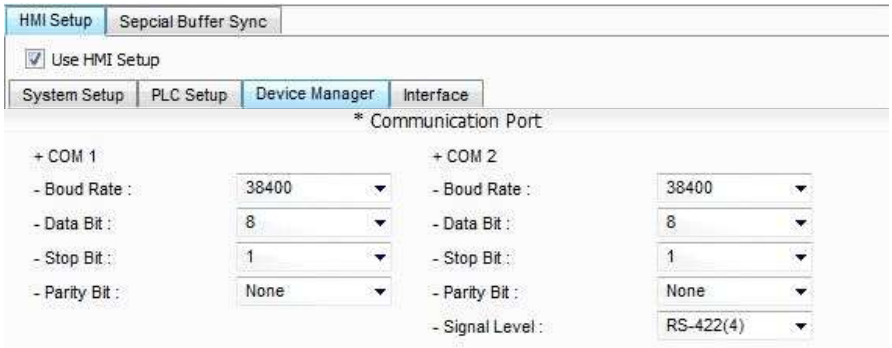
After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.



■ [Project > Project property > Project > Settings > TOP Name]

Set the communication interface of TOP tool.

- From right window [HMI Setup > check Use HMI Setup > Device Manager]



■ External device settings

This sets the communication driver of "MELSEC-Q Series SERIAL(QJ71C24, Format1)".

- PLC address (PLC) : External device setting address
- Block process method : Choose protocol method.

(2) External device settings

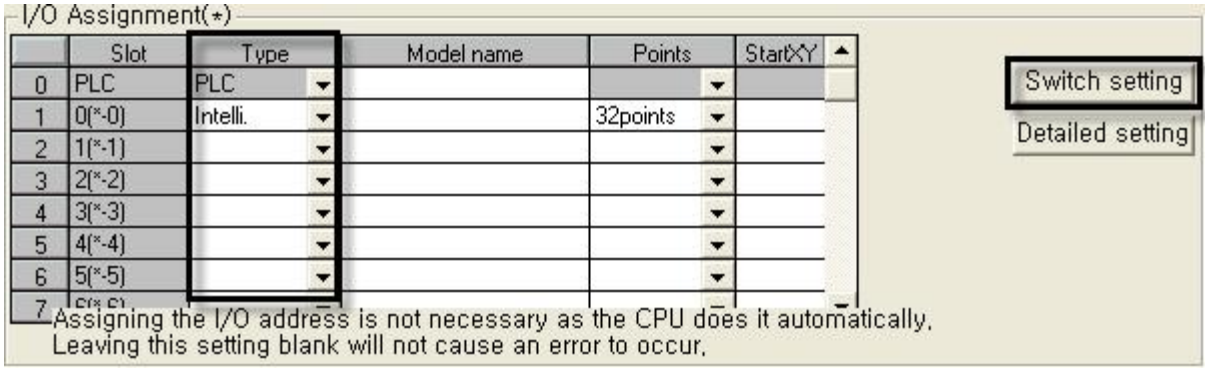
Please set up using MELSEC series Ladder Software "GX Developer" as below. Please refer the PLC user manual for more detailed information if you need.

> If you use "**QJ71C24**" or "**QJ71C24-R2**" communication card, please set the total sum of communication speed of channel 1(CH1), channel 2(CH2) less than **115200**[BPS].

1. From "GX Developer" project window, double click[Parameter] > [PLC parameter] to pop up [Q parameter setting] Dialog Box.

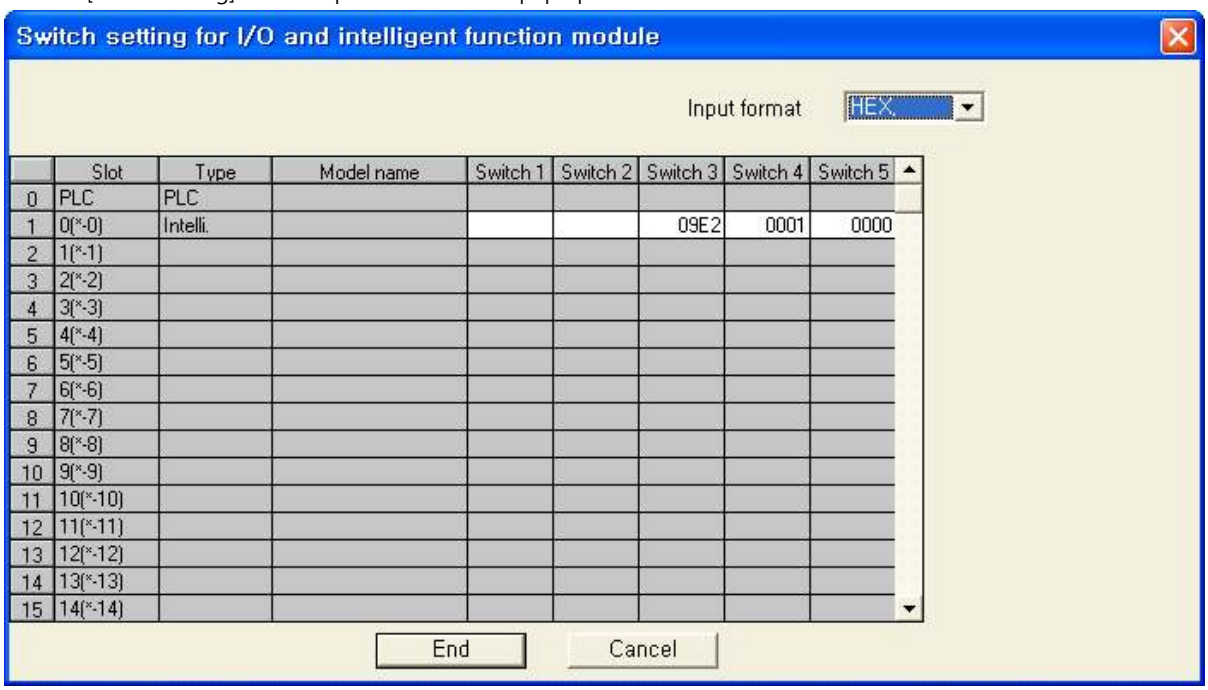
2. Please select [I/O Assignment] tab from [Q parameter setting] Dialog Box.

3. Please set the [type] which the communication module is installed to "**Intelligent**" from [I/O Assignment(*)] box.



(caution) The picture above is when communication module is installed at slot number 0.

4. Click [Switch setting] and set up as below on the pop up window.



Switch	Setting value	Setting details
Switch 1	05E2	9600 / 8 / 1 / NONE
	07E2	19200 / 8 / 1 / NONE
	09E2	38400 / 8 / 1 / NONE
	0BE2	115200 / 8 / 1 / NONE
Switch 2	5	FORMAT 5(4C FRAME FORMAT5 BINARY)
Switch 5	0	Set to "0" on address of Communication module (Channel 1, Channel 2).

In case of the Channel1, write the contents of the Switch1 and the Switch2 to the Switch3 and the Switch4.

※ Recommend the example of the setting contents

5. Please reset PLC after sending parameters that has been set from [Online] > [Write to PLC].

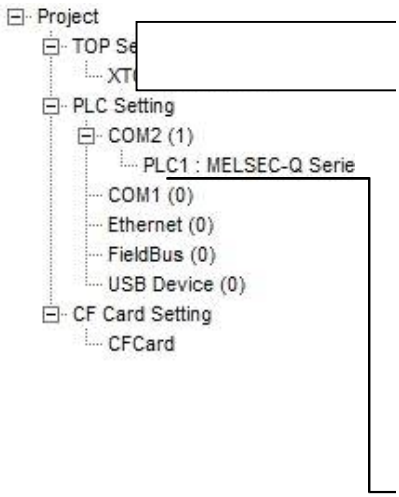
3.6 Examples of Setting 6

The system is set as below.

Details		TOP	MELSEC-Q Series	Remark
Serial level (port/channel)		RS-485 (2 wire, COM2)	RS-485 Channel 2(CH 2)	User settings
Address(PLC Address)		—	0	User settings
Serial baud rate	[BPS]	38400		User settings
Serial data bit	[Bit]	8		User settings
Serial stop bit	[Bit]	1		User settings
Serial parity bit	[Bit]	NONE		User settings
MC 프로토콜		FORMAT 1 (3C FRAME FORMAT1 ASCII)		User settings

(1) XDesignerPlus setup

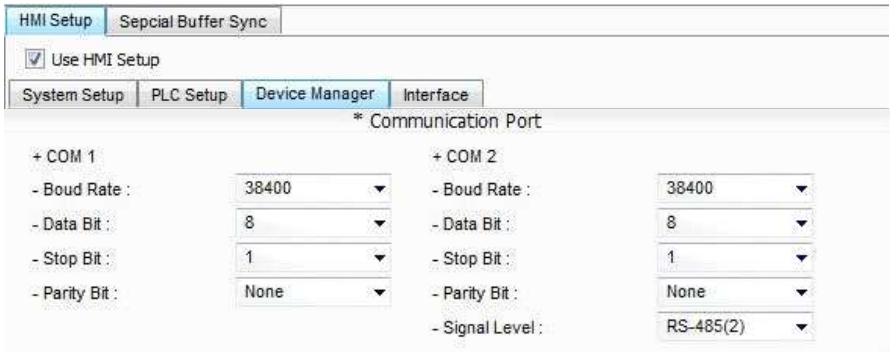
After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.



■ [Project > Project property > Project > Settings > TOP Name]

Set the communication interface of TOP tool.

- From right window [HMI Setup > check Use HMI Setup > Device Manager]



■ External device settings

This sets the communication driver of "MELSEC-Q Series SERIAL(QJ71C24, Format1)".

- PLC address (PLC) : External device setting address
- Block process method : Choose protocol method.

(2) External device settings

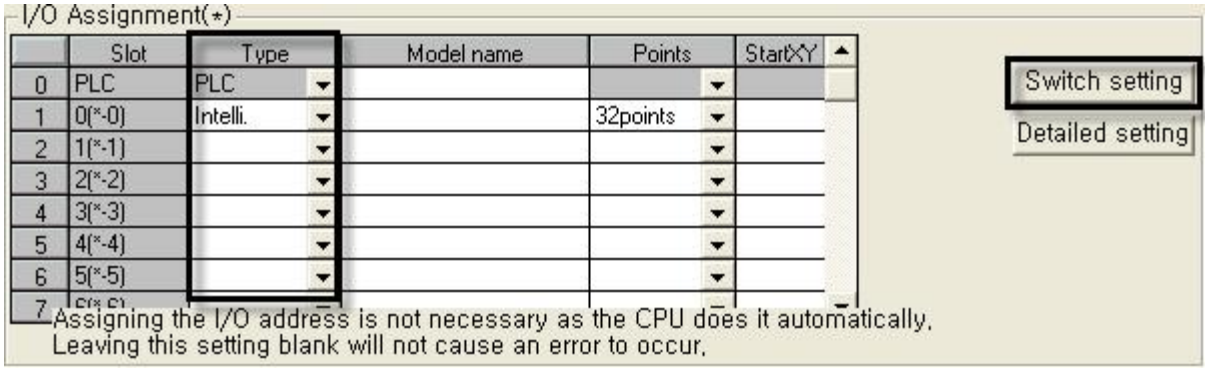
Please set up using MELSEC series Ladder Software "GX Developer" as below. Please refer the PLC user manual for more detailed information if you need.

> If you use "**QJ71C24**" or "**QJ71C24-R2**" communication card, please set the total sum of communication speed of channel 1(CH1), channel 2(CH2) less than **115200**[BPS].

1. From "GX Developer" project window, double click[Parameter] > [PLC parameter] to pop up [Q parameter setting] Dialog Box.

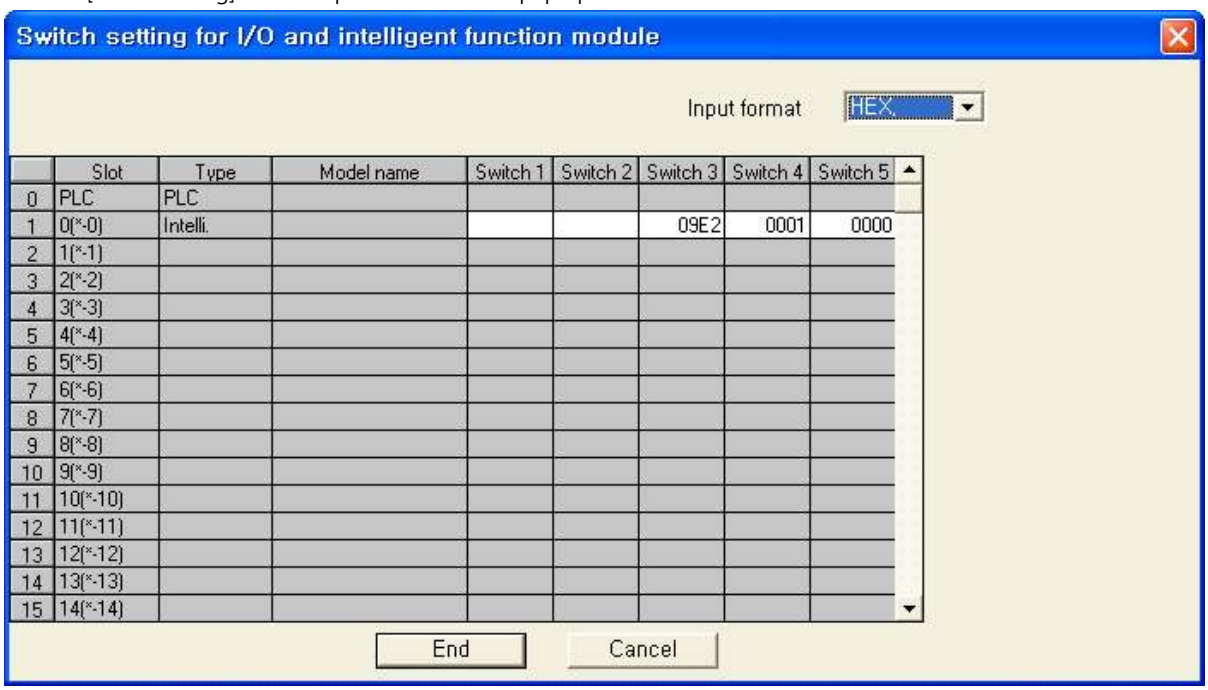
2. Please select [I/O Assignment] tab from [Q parameter setting] Dialog Box.

3. Please set the [type] which the communication module is installed to "**Intelligent**" from [I/O Assignment(*)] box.



(caution) The picture above is when communication module is installed at slot number 0.

4. Click [Switch setting] and set up as below on the pop up window.



Switch	Setting value	Setting details
Switch 1	05E2	9600 / 8 / 1 / NONE
	07E2	19200 / 8 / 1 / NONE
	09E2	38400 / 8 / 1 / NONE
	0BE2	115200 / 8 / 1 / NONE
Switch 2	5	FORMAT 5(4C FRAME FORMAT5 BINARY)
Switch 5	0	Set to "0" on address of Communication module (Channel 1, Channel 2).

In case of the Channel1, write the contents of the Switch1 and the Switch2 to the Switch3 and the Switch4.

※ Recommend the example of the setting contents

5. Please reset PLC after sending parameters that has been set from [Online] > [Write to PLC].

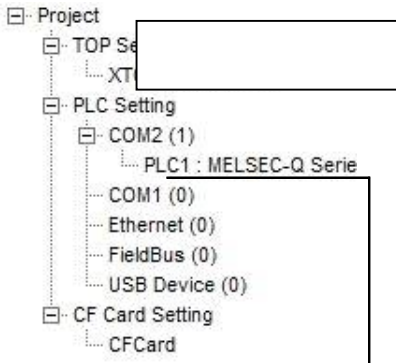
3.7 Examples of Setting 7

The system is set as below.

Details		TOP	MELSEC-Q Series	Remark
Serial level (port/channel)		RS-232C (COM2)	RS-232C (CPU port)	User settings
Serial baud rate	[BPS]	115200	115200	User settings
Serial data bit	[Bit]	8		User settings
Serial stop bit	[Bit]	1		User settings
Serial parity bit	[Bit]	ODD		User settings
MC Protocol		FORMAT 1 (3C FRAME FORMAT1 ASCII)		User settings

(1) XDesignerPlus setup

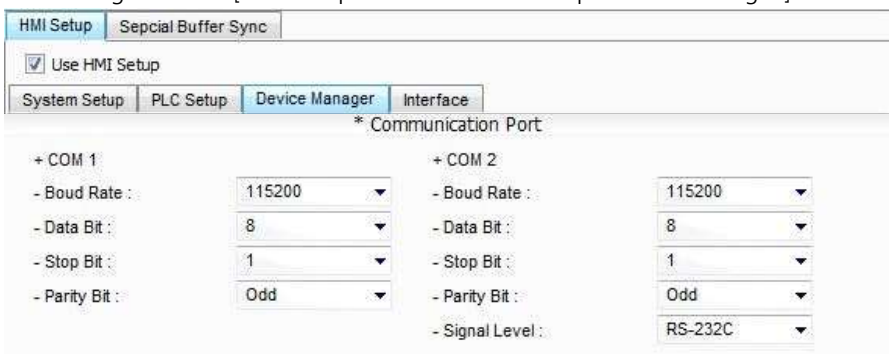
After setting the below details in [Project > Project Settings], download the detailed settings using TOP tool.



■ [Project > Project property > Project > Settings > TOP Name]

Set the communication interface of TOP tool.

- From right window [HMI Setup > check Use HMI Setup > Device Manager]



■ External device settings

This sets the communication driver of "MELSEC-Q Series SERIAL(QJ71C24, Format1)".

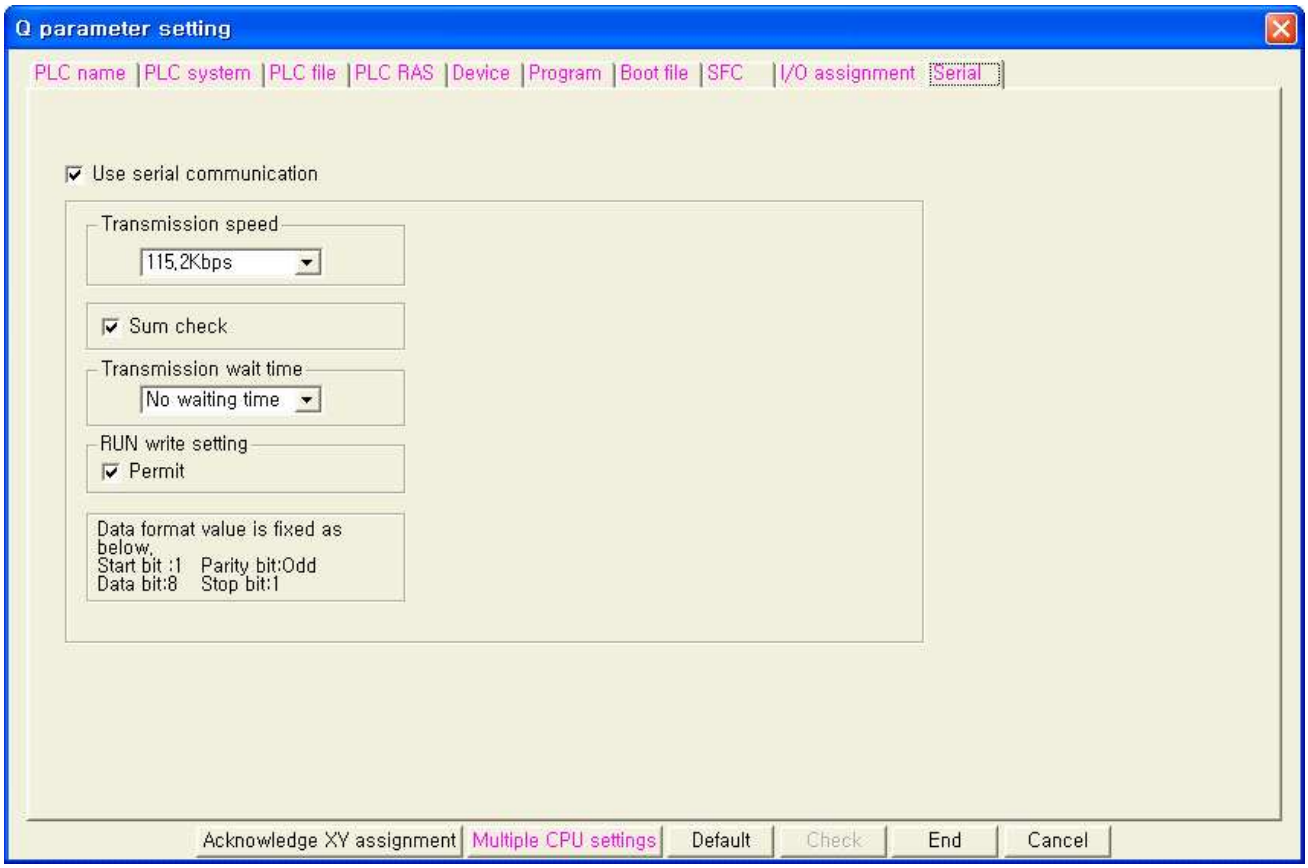
- PLC address (PLC) : External device setting address
- Block process method : Choose protocol method.

(2) External device settings

Please set up using MELSEC series Ladder Software "GX Developer" as below. Please refer the PLC user manual for more detailed information if you need.

1. From "GX Developer" project window, double click[Parameter] > [PLC parameter] to pop up [Q parameter setting] Dialog Box.

2. Set as below after selecting [Serial] Tab from the Dialog Box in [Q parameter setting].



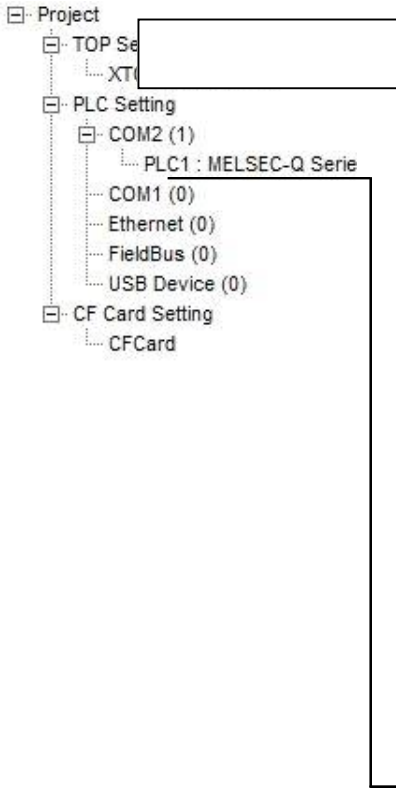
3. Please reset PLC after sending parameters that has been set from [Online] > [Write to PLC].

4. Communication settings details

Communication settings are available at XDesignerPlus or TOP main menu. Communication settings must be identical with the external devices.

4.1 XDesignerPlus settings details

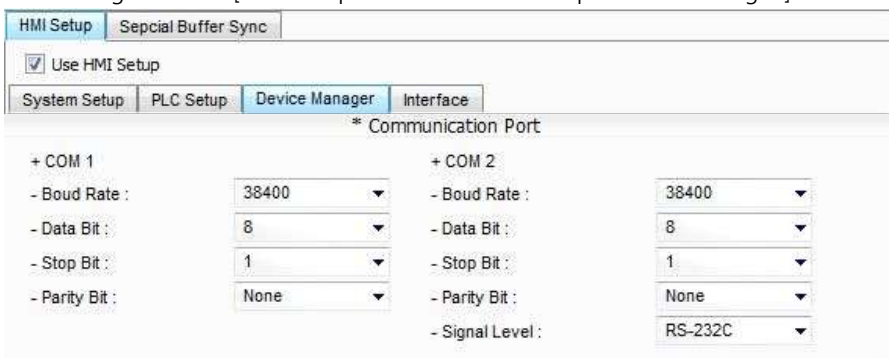
Select [Project > Project property] to show the below window.



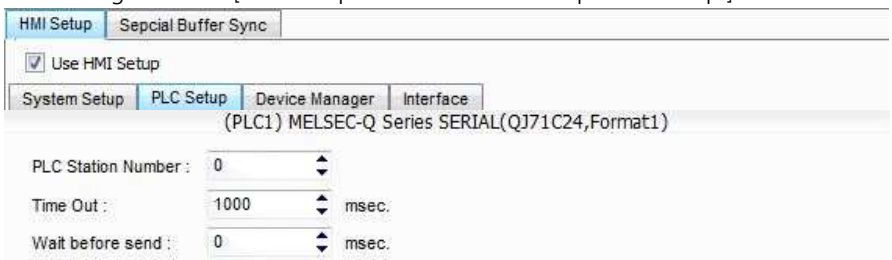
■ [Project > Project property > Project > Settings > TOP Name]

Set the communication interface of TOP tool.

- From right window [HMI Setup > check Use HMI Setup > Device Manager]



- From right window [HMI Setup > check Use HMI Setup > PLC Setup]



■ External device settings

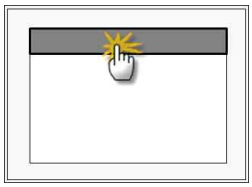
This sets the communication driver of "MELSEC-Q Series SERIAL(QJ71C24, Format1)".

■ Communication Interface Settings

Details	Contents
Signal level	External device – select serial communication method between TOPs. (COM1 supplies RS-232C only)
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.
Time out [x100 mSec]	Set up TOP's waiting time from external device at [0 - 5000] x 1mSec.
Transmitting Delay Time [x10 mSec] Receiving Wait Time [x10 mSec]	Set up TOP's waiting time between response receiving – next command request transmission from external device at [0 – 5000] x 1 mSec.
PLC address [0~65535]	Address of other device. Select between [0 - 65535].

4.2 TOP main menu setup item

- 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 , 38400 , 8 , 1 , NONE 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 waiting time from external device at [0 - 5000] x 1mSec.
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 setup] – Setup relevant port's serial parameter.

Port Settings	
* Serial communication + COM-1 Port - Baud rate : 38400 [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 : 38400 [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 Setup > TOP [COM 2 or COM 1] click "Communication Diagnosis" button.
- Diagnosis dialog box will pop up on the screen, you can judge by following informations that are shown on box no. 3 section.

OK!	**Communication setting succeeded**
Time Out Error!	Communication setting error - 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
	Assigned Address Limit				OK	NG
TOP setup	Setup port	COM 1	COM 2		OK	NG
	Name of Driver				OK	NG
	Confront Address	Project Property Setup			OK	NG
		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

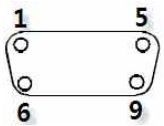
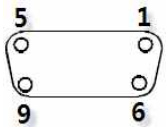
5. Cabl

This Chapter is to introduce the Cable diagram for regular communication between TOP and relative devices. (Cable diagram that are being introduced in this chapter might differs from the suggestions of "Mitsubishi Electric Corporation".)

5.1 Cable diagram 1

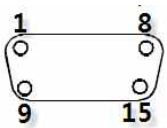
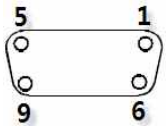
■ 1 : 1 Connection

(A) XTOP COM 2 Port (9 pin)

XTOP COM2			Cable Connection	PLC		
pin arangement * caution 1)	Name of Signal	Pin Number		Pin Number	Name of Signal	**pin arangement * caution 1)**
 Front View of D-SUB 9 Pin (male, convex)	CD	1		1	CD	 Front View of D-SUB 9 Pin (male, convex)
	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		

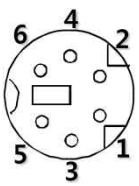
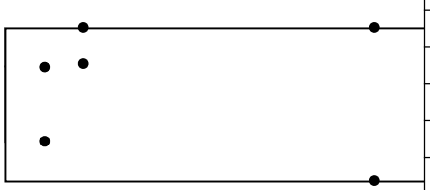
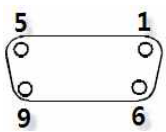
*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

(B) XTOP COM 2 Port (15 pin)

XTOP COM2			Cable Connection	PLC		
pin arangement * caution 1)	Name of Signal	Pin Number		Pin Number	Name of Signal	**pin arangement * caution 1)**
 Front View of D-SUB 9 Pin (male, convex)	CD	1		1	CD	 Front View of D-SUB 9 Pin (male, convex)
	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		

*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

(C) XTOP/ATOP COM 1 Port (6 Pin)

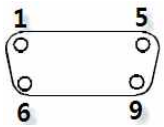
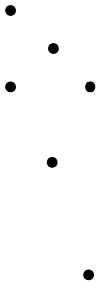
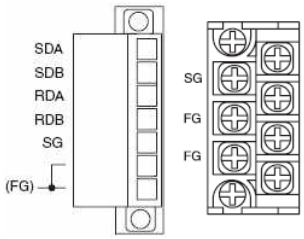
XTOP/ATOP COM 1 Port			Cable Connection	PLC		
pin arangement * caution 1)	Name of Signal	Pin Number		Pin Number	Name of Signal	**pin arangement * caution 1)**
 Front View of D-SUB 6 Pin (male, convex)		1		1	CD	 Front View of MINI-DIN 9 Pin (male, convex)
	RD	2		2	RD	
	SG	3		3	SD	
		4		4	DTR	
		5		5	SG	
	SD	6		6	DSR	
				7	RTS	
				8	CTS	
				9		

*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

5.2 Cable diagram 2

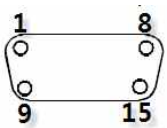
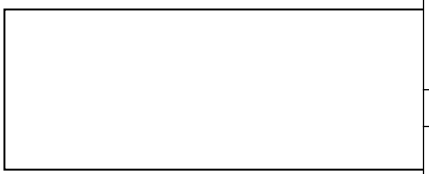
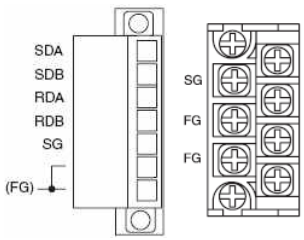
■ 1 : 1 Connection

(A) XTOP COM 2 Port (9 pin)

XTOP COM2			Cable Connection	PLC	
pin arangement * caution 1)	Signal	Pin		Signal	Pin Arrangement
 Front View of D-SUB 9 Pin (male, convex)	RDA	1		SDA	
		2		SDB	
		3		RDA	
	RDB	4		RDB	
	SG	5		SG	
	SDA	6			
		7			
		8			
	SDB	9			

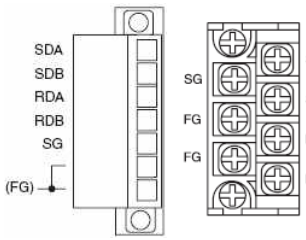
*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

(B) XTOP/ATOP COM 2 Port (15 Pin)

XTOP COM2			Cable Connection	PLC	
pin arangement * caution 1)	Signal	Pin		Signal	Pin Arrangement
 Front View of D-SUB 9 Pin (male, convex)	-	1		SDA	
	(2~9)			SDB RDA	
	-	10		RDB	
	RDA	11		SG	
	RDB	12			
	SDA	13			
	SDB	14			
	SG	15			

*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

(C) ATOP COM 2 Port (5 Pin Terminal)

XTOP COM2		Cable Connection	PLC	
pin arangement * caution 1)	Signal		Pin	Pin Arrangement
Front View of Terminal Block 5 Pin	RDA		SDA	
	RDB		SDB	
	SDA		RDA	
	SDB		RDB	
	SG		SG	

*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

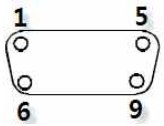
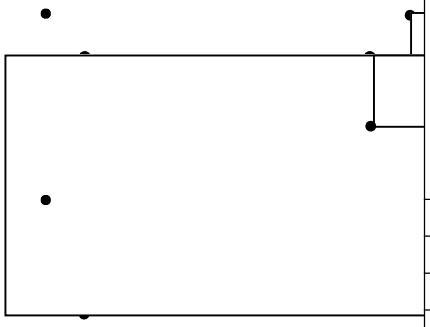
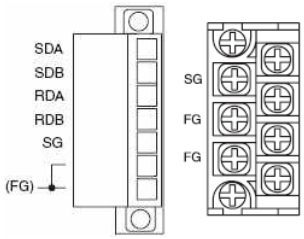
■ 1 : N Connection - Please connect referring to 1:1 connection as below.

TOP	Cable Connection and Signal Direction	PLC	Cable Connection and Signal Direction	PLC
Name of Signal		Name of Signal		Name of Signal
RDA		SDA		SDA
RDB		SDB		SDB
SDA		RDA		RDA
SDB		RDB		RDB
SG		SG		SG

5.3 Cable Table 3

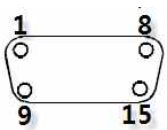
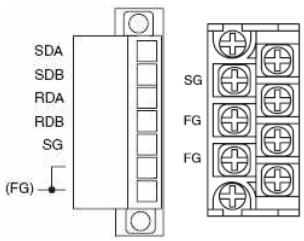
■ 1 : 1 Connection

(A) XTOP COM 2 Port (9 pin)

XTOP COM2			Cable Connection	PLC	
pin arangement * caution 1)	Signal	Pin		Signal	Pin Arrangement
 Front View of D-SUB 9 Pin (male, convex)	RDA	1		SDA	
		2		SDB	
		3		RDA	
	RDB	4		RDB	
	SG	5		SG	
	SDA	6			
		7			
		8			
	SDB	9			

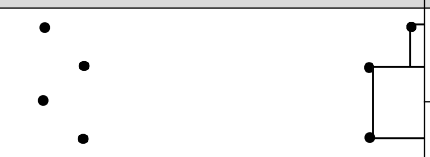
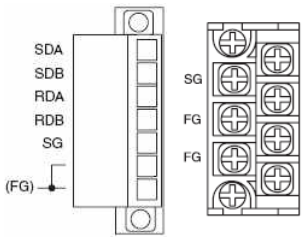
*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

(B) XTOP COM 2 Port (15 pin)

XTOP COM2			Cable Connection		
pin arangement * caution 1)	Signal	Pin		Signal	Pin Arrangement
 Front View of D-SUB 15 Pin (male, convex)	–	1		SDA	
	(2~9)			SDB	
				RDA	
	–	10		RDB	
	RDA	11		SG	
	RDB	12			
	SDA	13			
	SDB	14			
	SG	15			

*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

(C) ATOP COM 2 Port (Terminal Block 5 pin)

ATOP COM2		Cable Connection	PLC	
pin arangement * caution 1)	Signal		Signal	Pin Arrangement
Front View of Terminal Block 5 Pin	RDA		SDA	
	RDB		SDB	
	SDA		RDA	
	SDB		RDB	
	SG		SG	

*Caution1) Pin arrangement is shown from connecting face in cable connection connecter

■ 1 : N / N : 1 Connection - Please connect referring to 1:1 connection as below.

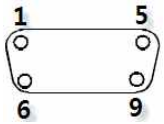
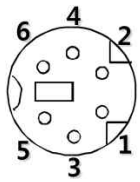
TOP	Cable Connection and Signal Direction	PLC
Name of Signal		Name of Signal
RDA		SDA
RDB		SDB
SDA		RDA
SDB		RDB
SG		SG

PLC	Cable Connection and Signal Direction	PLC
Name of Signal		Name of Signal
SDA		SDA
SDB		SDB
RDA		RDA
RDB		RDB
SG		SG

5.4 케이블

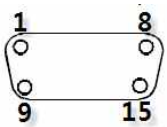
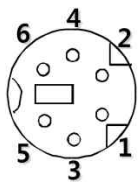
■ 1 : 1 Cor

(A

pin arangement * caution 1)	Name of Signal	Pin Number	Cable Connection	PLC Pin Number	PLC Name of Signal	PLC pin arangement * caution 1)
 Front View of D-SUB 9 Pin (Male, convex)	CD	1		1	RD	 Front View of D-SUB 6 Pin male (Male, convex)
	RD	2		2	SD	
	SD	3		3	SG	
	DTR	4		4		
	SG	5		5	DSR	
	DSR	6		6	DTR	
	RTS	7				
	CTS	8				
		9				

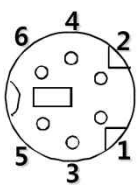
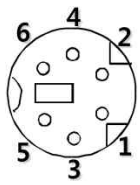
*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

(B) XTOP COM 2 Port (15 pin)

XTOP COM2 pin arangement * caution 1)	XTOP COM2 Name of Signal	XTOP COM2 Pin Number	Cable Connection	PLC Pin Number	PLC Name of Signal	PLC pin arangement * caution 1)
 Front View of D-SUB 9 Pin (Male, convex)	CD	1		1	RD	 Front View of D-SUB 6 Pin (Male, convex)
	RD	2		2	SD	
	SD	3		3	SG	
	DTR	4		4		
	SG	5		5	DSR	
	DSR	6		6	DTR	
	RTS	7				
	CTS	8				
		9				

*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

(C) XTOP/ATOP COM 1 Port (6 Pin)

XTOP/ATOP COM 1 Port pin arangement * caution 1)	XTOP/ATOP COM 1 Port Name of Signal	XTOP/ATOP COM 1 Port Pin Number	Cable Connection	PLC Pin Number	PLC Name of Signal	PLC pin arangement * caution 1)
 Front View of D-SUB 6 Pin (Male, convex)		1		1	RD	 Front View of MINI-DIN 6 Pin (Male, convex)
	RD	2		2	SD	
	SG	3		3	SG	
		4		4		
		5		5	DSR	
	SD	6		6	DTR	

*Caution1) Pin arrangement is shown from connecting face in cable connection connecter.

6. Support address

Devices that are usable with TOP is as below.

There might be difference in the range of device (address) by type / series of CPU module TOP series supports the maximum address range that external device series use Please refer each CPU module user manual carefully for devices that you desired to use to prevent not getting out of range.

Device	Bit Address	Word Address	Word Address NOTE	32 BIT
Input Relay	X0000 - X1FFF (HEX)	X0000 - X1FF0 (HEX)	**X***0 *caution1)**	
Output Relay	Y0000 - Y1FFF (HEX)	Y0000 - Y1FF0 (HEX)	**Y***0 *caution1)**	
Internal Relay	M0000 - M32767	M0000 - M32752	**M0000 + 16*n *caution2)**	
Special Relay	SM0000 - SM2047	SM0000 - SM2032	**SM0000+16*n *caution2)**	
Latch Relay	L0000 - L32767	L0000 - L32752	**L0000 + 16*n *caution2)**	
Annunciator	F0000 - F32767	F0000 - F32752	**F0000 + 16*n *caution2)**	
Edge Relay	V0000 - V32767	V0000 - V32752	**V0000 + 16*n *caution2)**	
Step Relay	S0000 - S8191	S0000 - S8176	**S0000 + 16*n *caution2)**	
Link Relay	B0000 - B7FFF (HEX)	B0000 - B7FF0 (HEX)	**B***0 *caution1)**	
Special Link Relay	SB000 - SB7FF (HEX)	SB000 - SB7F0 (HEX)	**SB***0 *caution1)**	
Timer (contact)	TS00000 - TS23087			
Timer (coil)	TC00000 - TC23087			
Aggregate Timer (contact)	SS00000 - SS23087			**L/H**
Aggregate Timer (coil)	SC00000 - SC23087			***caution3)**
Counter (contact)	CS00000 - CS23087			
Counter (coil)	CC00000 - CC23087			
Timer (current value)		TN00000 - TN23087		
Aggregate Timer (current value)		SN00000 - SN23087		
Counter (current value)		CN00000 - CN23087		
Data Register		D00000 - D25983		
Special Data Register		SD0000 - SD2047		
File Register		☞User Defined Range		

*Caution1) If the bit address is hexadecimal number '0~F', starting bit 0 bit shall be used as word address.

*Caution2) If the bit address is decimal number, it shall be used as word address by every value of '16'.

*Caution3) The address will be saved where the 16BIT data which is subordinate to 32BIT data monitor registered and super ordinate 16BIT data will be saved right after the address that is monitor registered.

Ex) If 32BIT data, hexadecimal data 12345678 is saved to the address number D00100, it shall be saved with 16BIT device address as below.

Details	32BIT	16BIT	
Address	D00100	D00100	D00101
Input data (Hexadecimal Number)	12345678	5678	1234