# Basic touch operations and ramp functions

1. Summary

Touch also known as switch has various functions such as bit device on/off, operation, writing values, screen reverse and other special functions. Among those functions, here briefly explains most commonly used features like bit switches and bit lamps. After arranging bit switches and ramps like the below picture, pressing certain switches will turn on specific lamps.
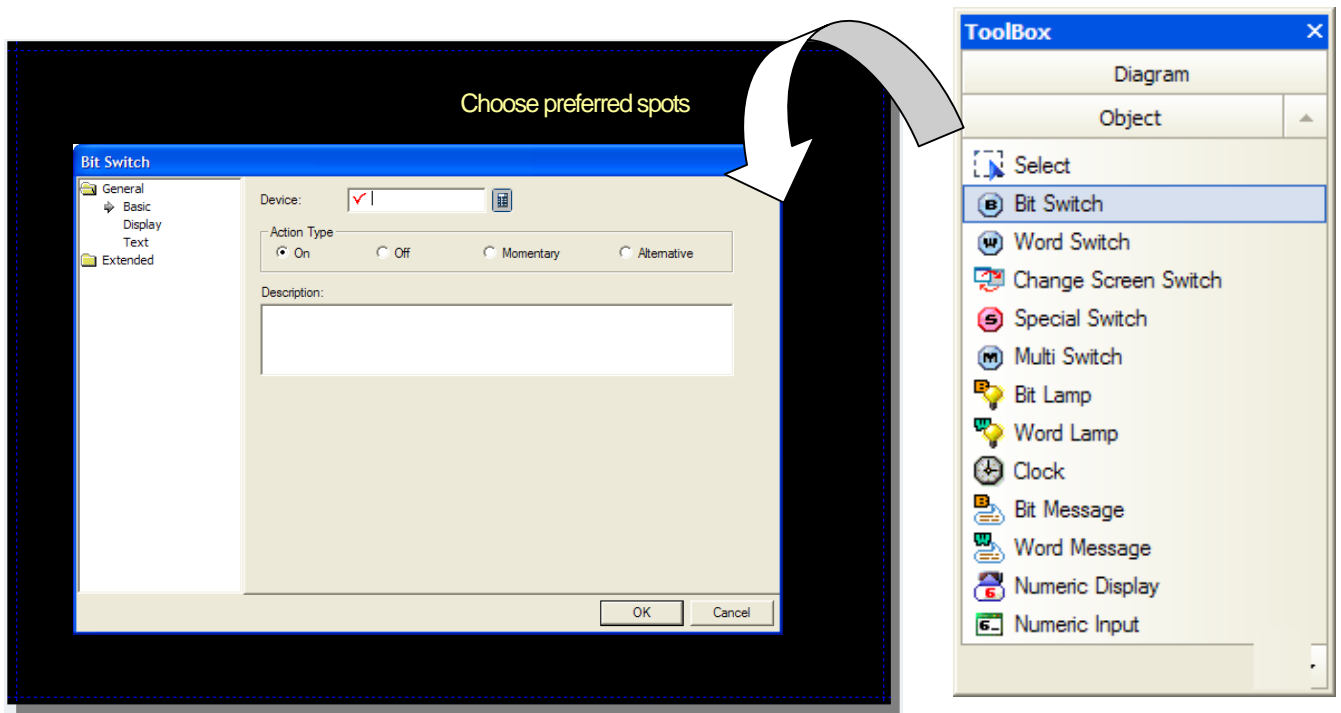

<Switch off condition>   <Switch on condition>
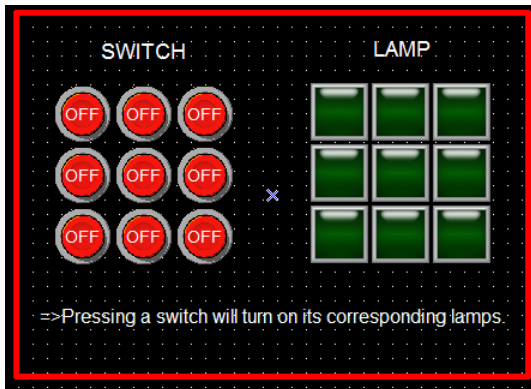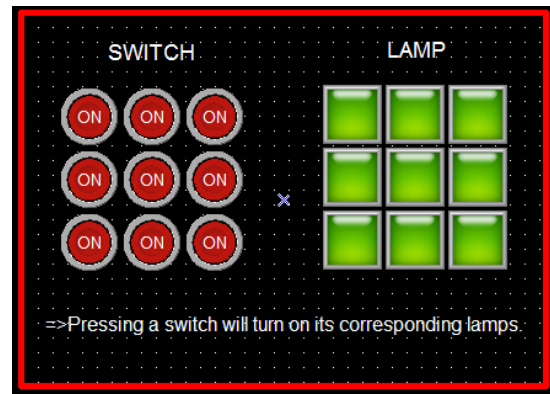
Easy to understand and follow if you execute the sample screen data, '1.SwitchLamp.xpd', at XP-Builder
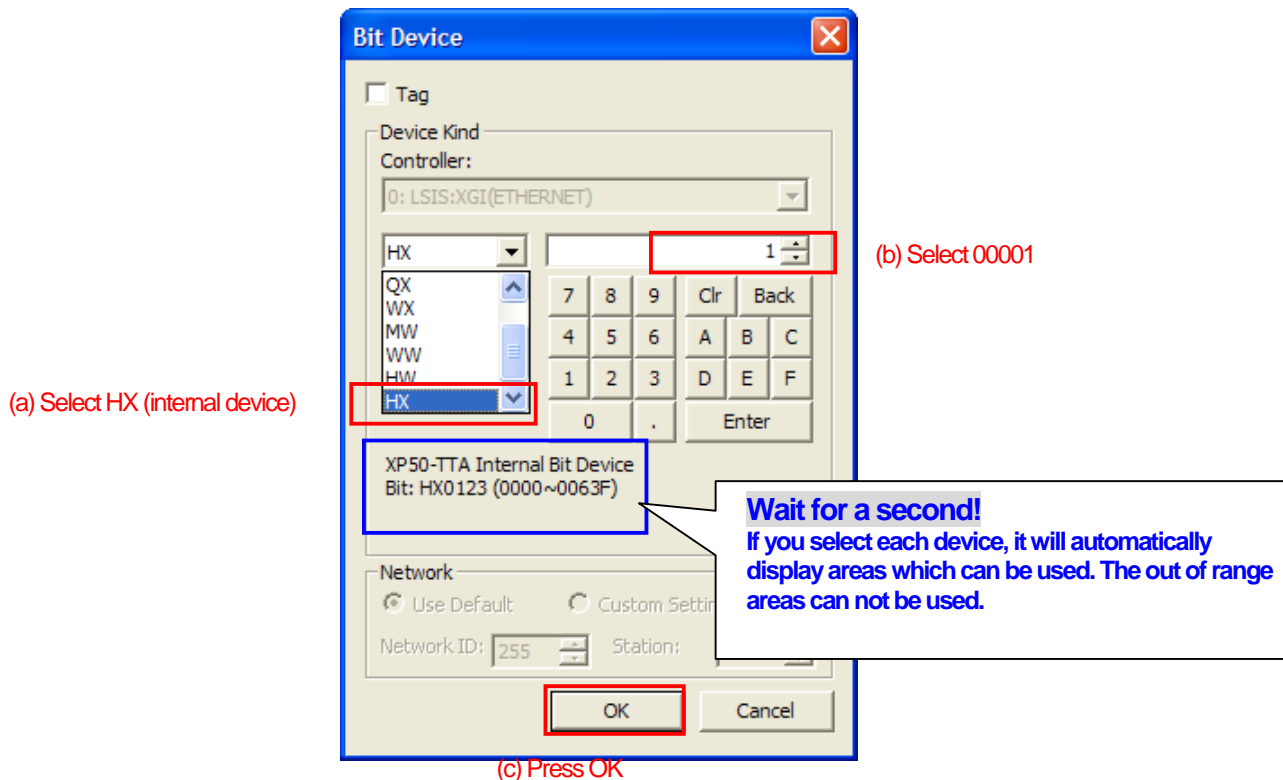
2. Screen data making

(1) From the object category of the tool box, select a 'Bit Switch' and place it on the screen.

The setting window will be appeared at XP-Builder after click 'bit switch' by a mouse and click again on the screen..
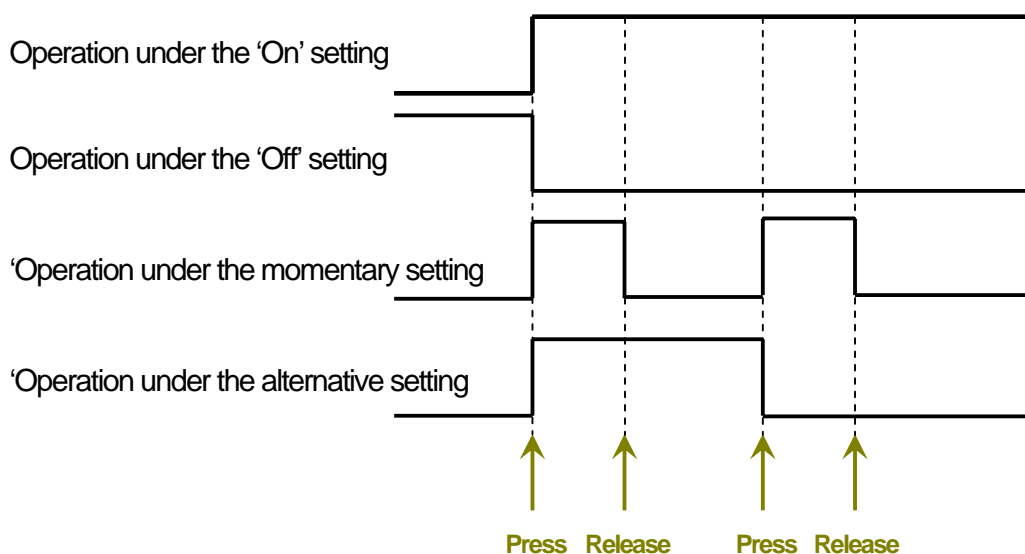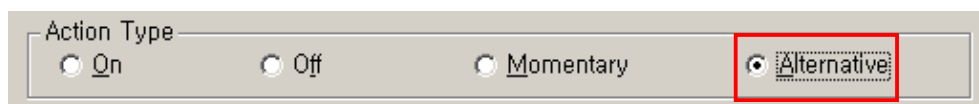
(2) Setting for devices and action types

Press the icon [icon] next to device input box, the bit device window will be appeared.
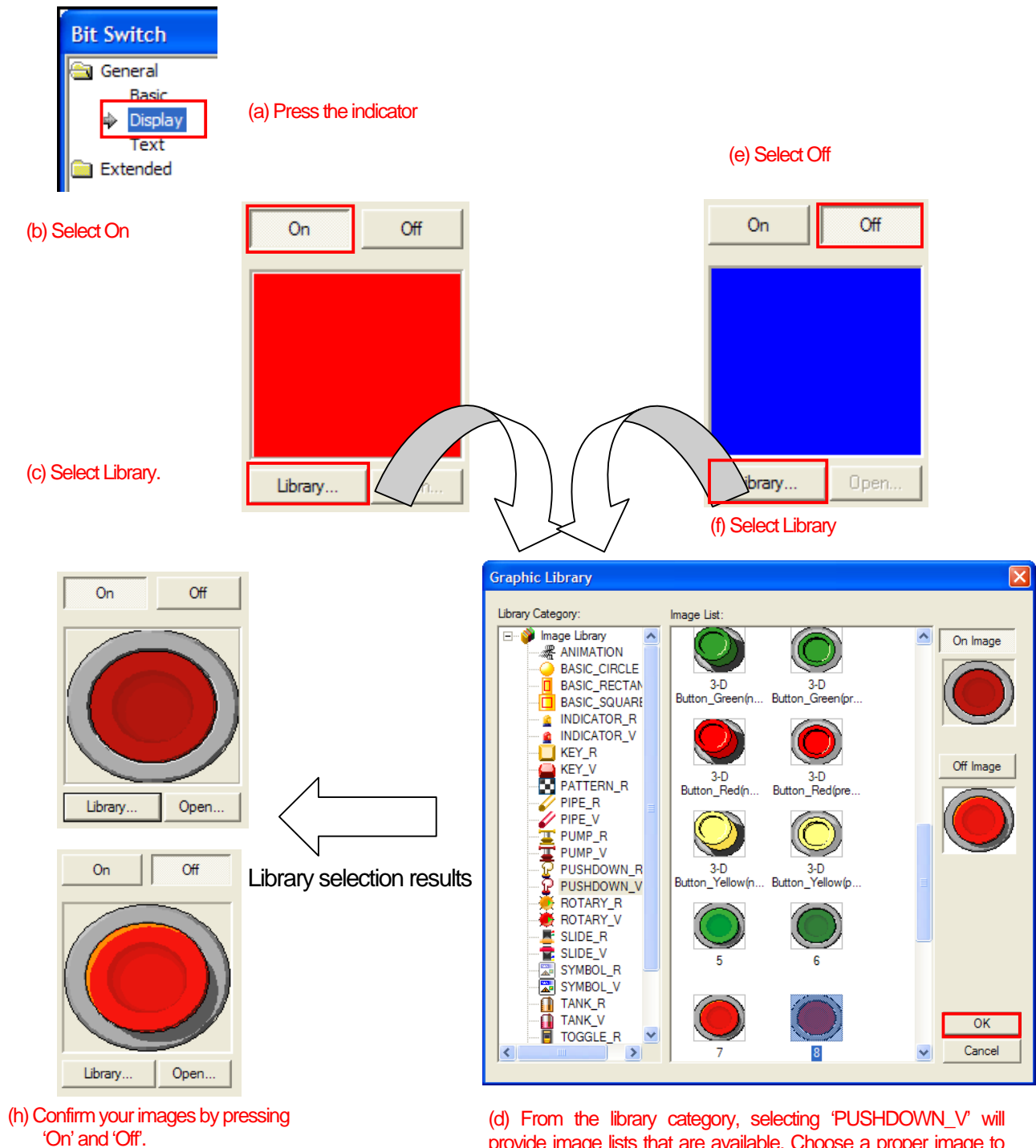Press OK after entering devices.

(a) Select HX (internal device)

(b) Select 00001

Wait for a second!
If you select each device, it will automatically display areas which can be used. The out of range areas can not be used.

(c) Press OK

Select 'Alternative' under the action type. The alternative will change the status of switch every time you press.

Operation under the 'On' setting

Operation under the 'Off' setting

'Operation under the momentary setting

'Operation under the alternative setting
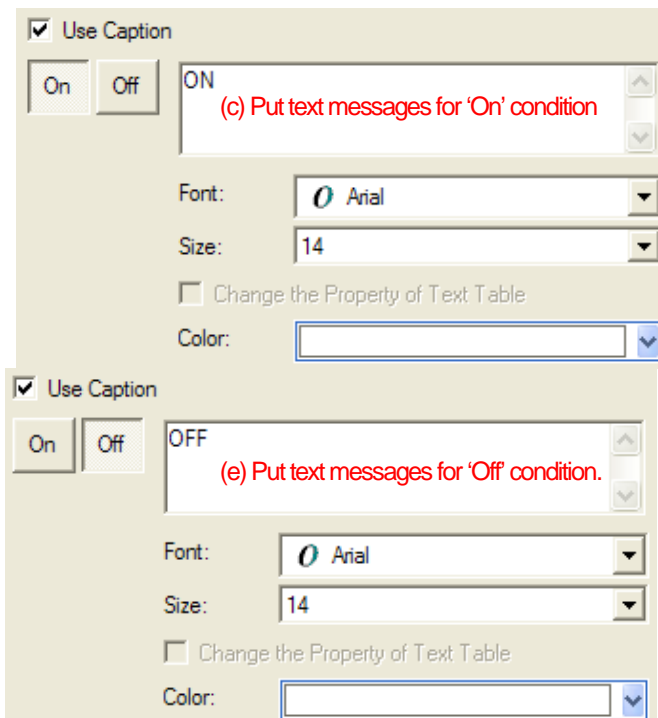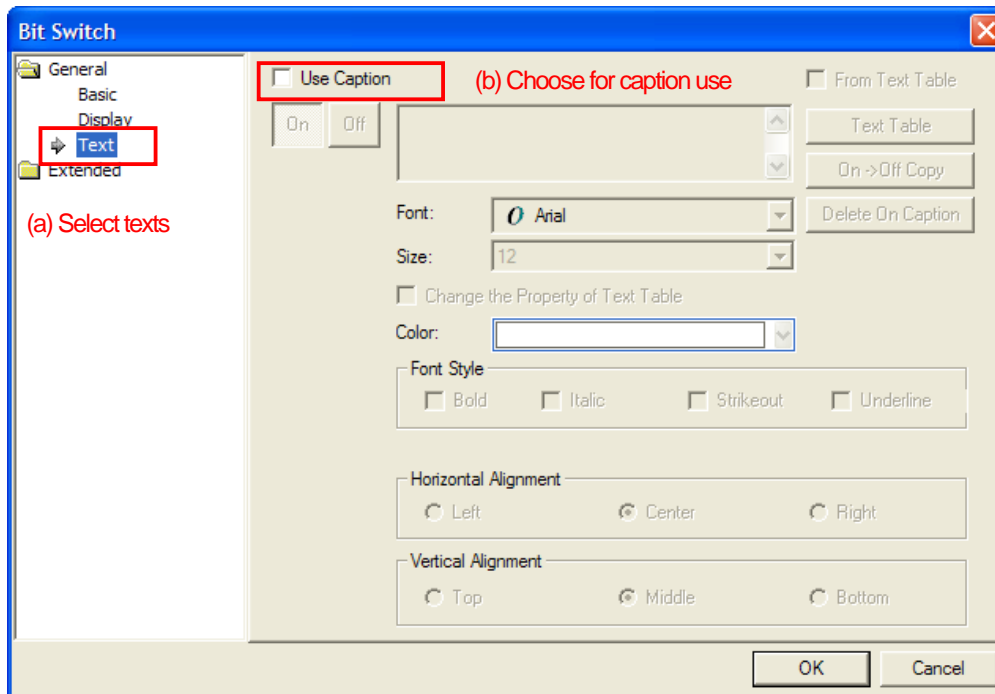
Press **Release**   **Press** **Release**

(3) Select an image for the switch.

From left column, click on 'Display' will take you to the screen where you will be able to choose your images. First, in order to choose the image for 'On' condition, follow these procedures. Select 'On", click 'Library', and choose your image. For selecting a 'Off' condition image, select 'Off' first, click 'Library' and search for the image.

.

(a) Press the indicator

(e) Select Off

(b) Select On

(c) Select Library.

(f) Select Library

Library selection results

(h) Confirm your images by pressing 'On' and 'Off'.

(d) From the library category, selecting 'PUSHDOWN_V' will provide image lists that are available. Choose a proper image to display 'On' condition

(g) Choose the image for 'Off' condition as well.

(4) Choose whether captions will be used under On/Off conditions.

When settings are done, press OK

(5) The bit switch like the below picture will be displayed on the screen..

(6) From XP-Builder's toolbar, prearranged information for settings can be confirmed by clicking on the icon

Press
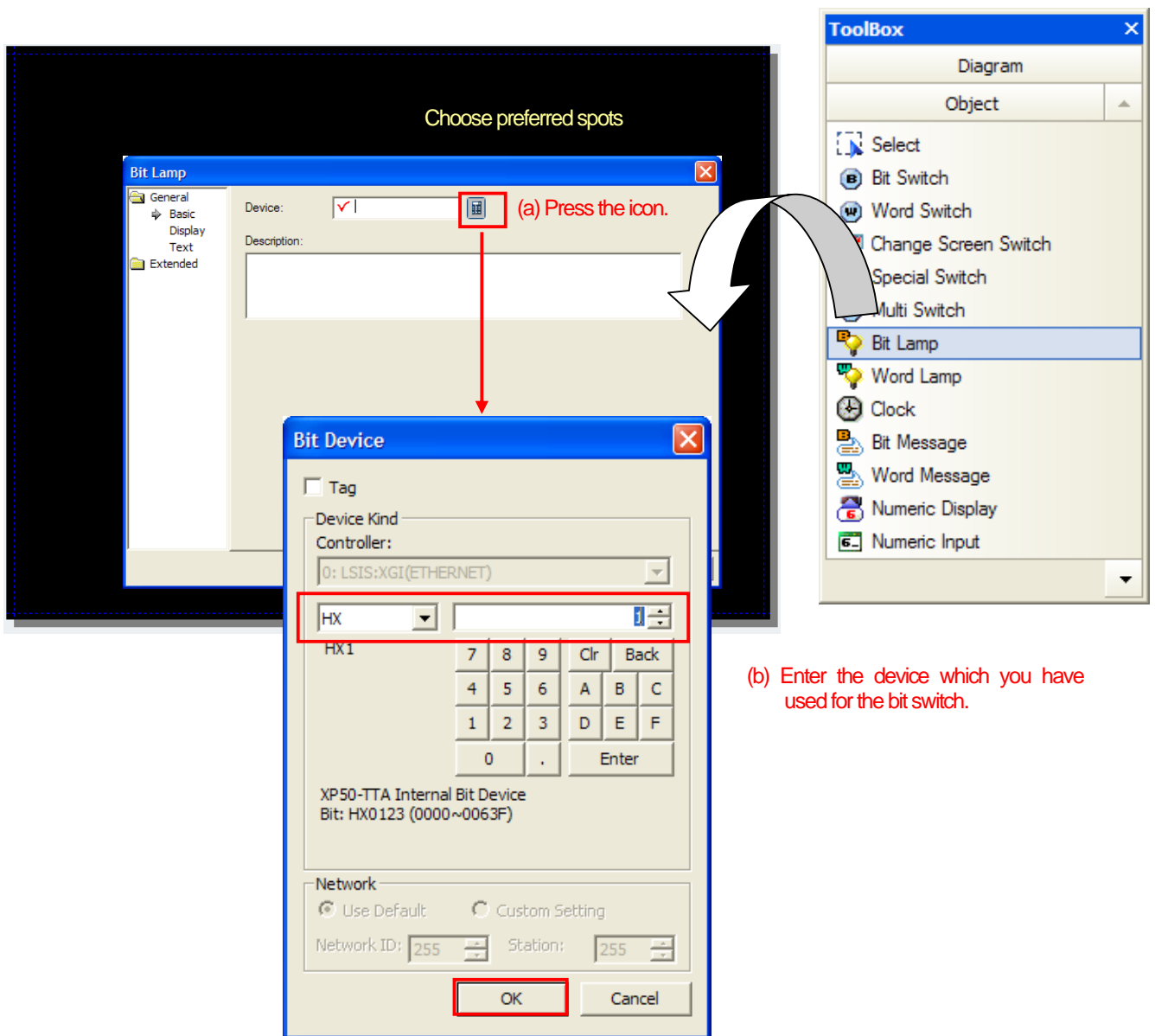
Display currently arranged device.
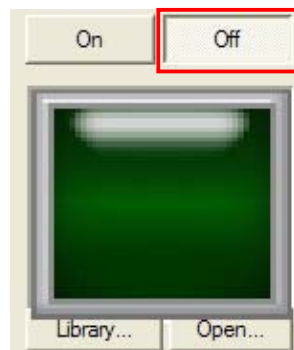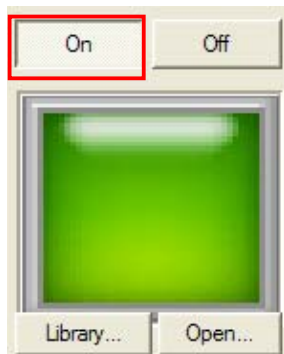

Press

Display its On/Off status every time you press

(7) Prearranged bit switch settings can be checked through its bit lamp.

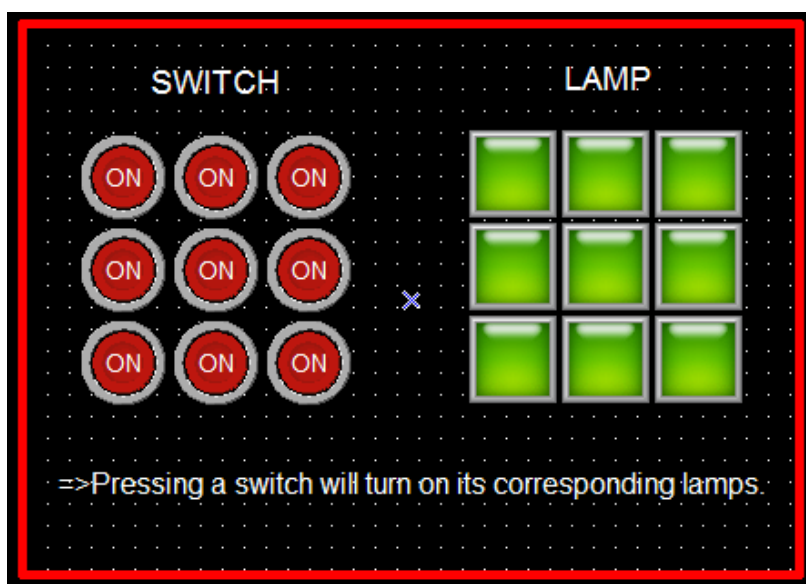From XP-Builder, setting window will be appeared when you click on the bit lamp and click again on the screen.

Choose preferred spots

(a) Press the icon.

(b) Enter the device which you have used for the bit switch.

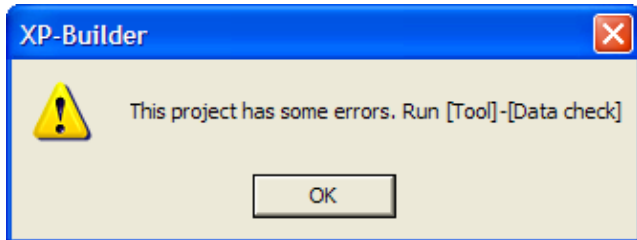(8) By following the same procedures as for a bit switch, choose an image for On and Off.

(9) Build the screen data like the picture below by following (1) through (8) again.
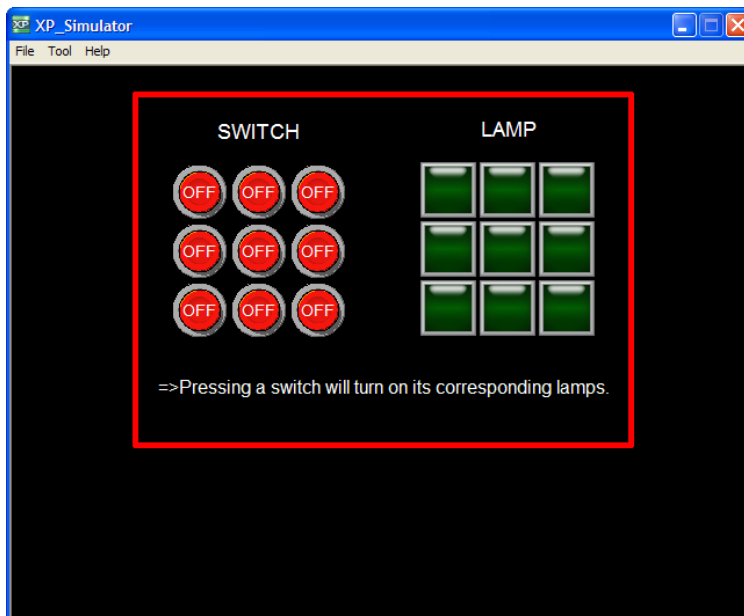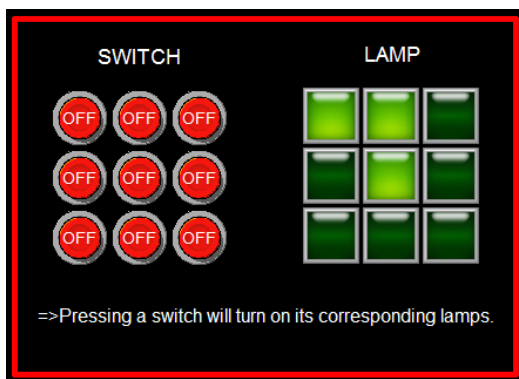
3. Verify through simulations

Among XP-Builder's toolbar [toolbar icons], choose this icon [icon].
For the case when error exists in the screen data, following message will be displayed.

If there were no errors, the simulator will start.

Pressing a switch will turn on its corresponding lamps.
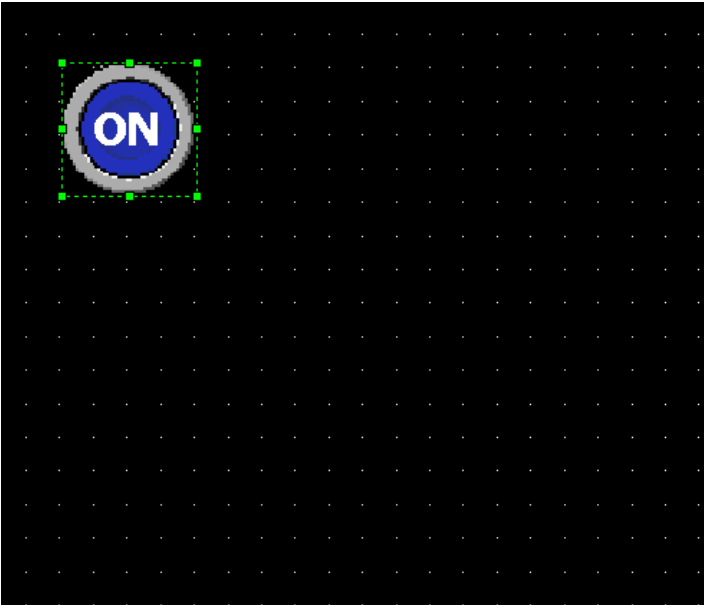
4. Users' tips!

☞ Multi-copy function

Select the object which you would like to copy in series by a mouse.

From the toolbar [toolbar icons] select the icon [icon].

If the icon is not activated [icon], you forgot to select the object.

Under below setting window, you are able to choose copy directions, quantity, spacing between objects, and address increment.
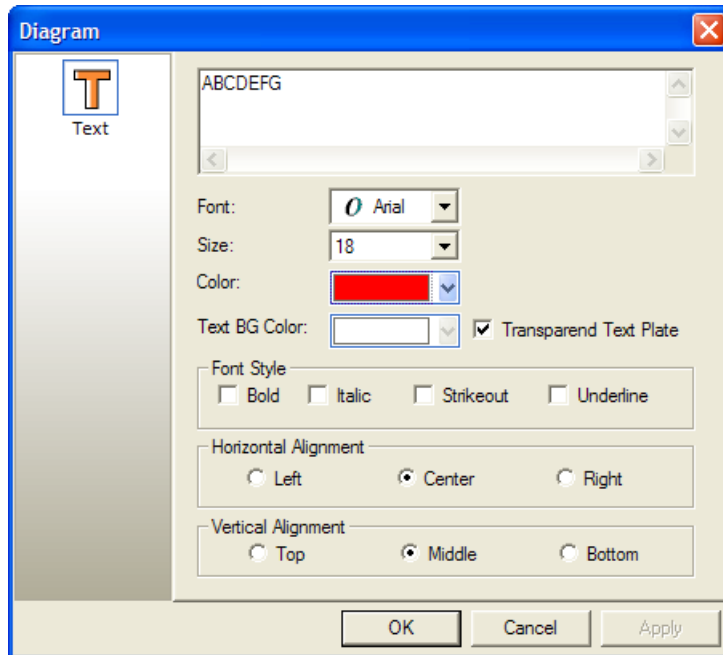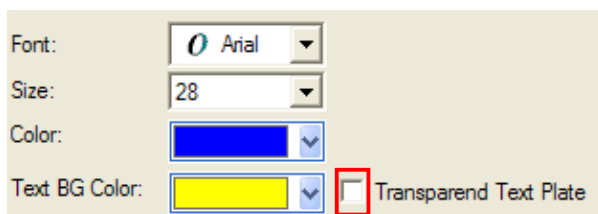
☞ Texts entry

When you wish to put texts on the screen, select 'Text' [Text]
in the diagram under the toolbox. After choosing the text, entry window
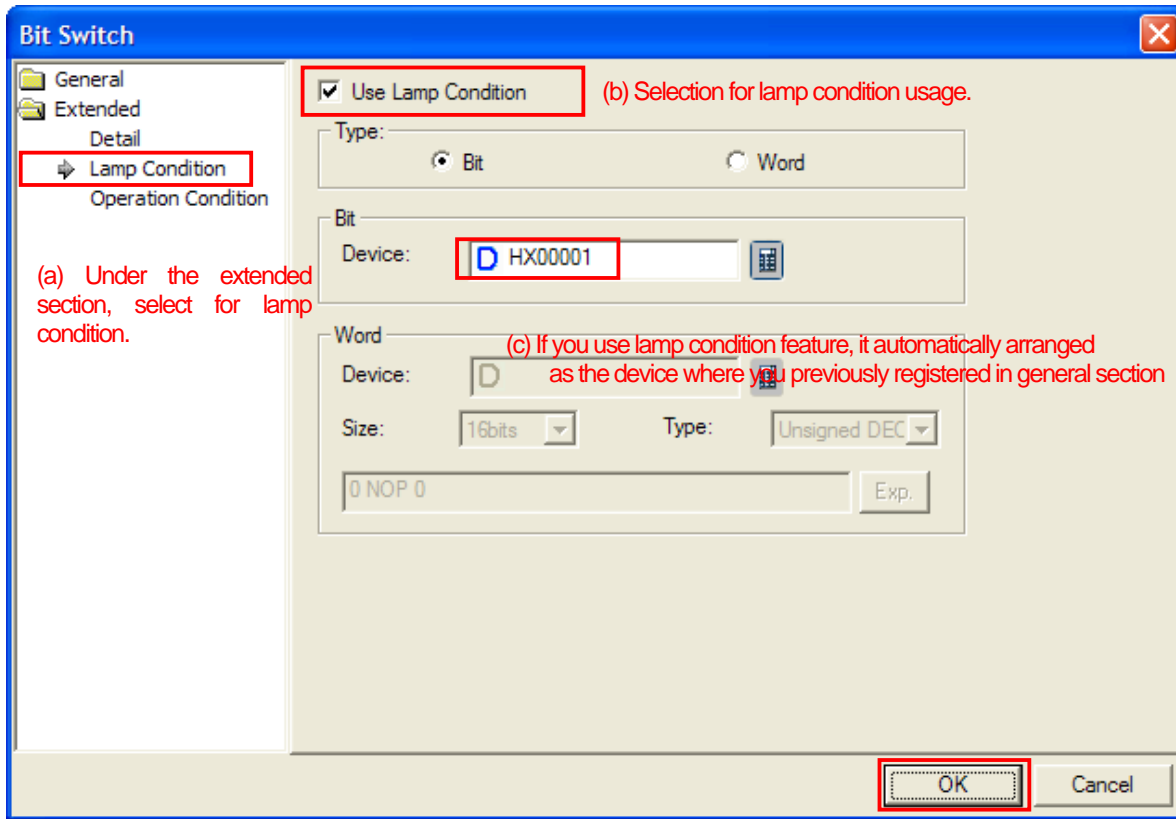will be appeared. Then select for font, size, and color.

If you wish to put background colors in the texts, uncheck transparent text plate then choose the color.

☞Texts entry

In principle switch operates when pressed. Therefore it won't display the current status of device. In order to check the current status of device, a lamp will be required. However using lamp condition feature which is one of extended functions in a bit switch will allow you to use a switch just like a lamp (same as lamp functions)

(a) Under the extended section, select for lamp condition.

(b) Selection for lamp condition usage.

(c) If you use lamp condition feature, it automatically arranged as the device where you previously registered in general section

(d) Press OK.

Password function

1. Summary

We provide password functions since any modification and writing on device values through switches and inputs can change the status of controlled machineries, which is an important task. XGT Panel provides10 levels of password function.
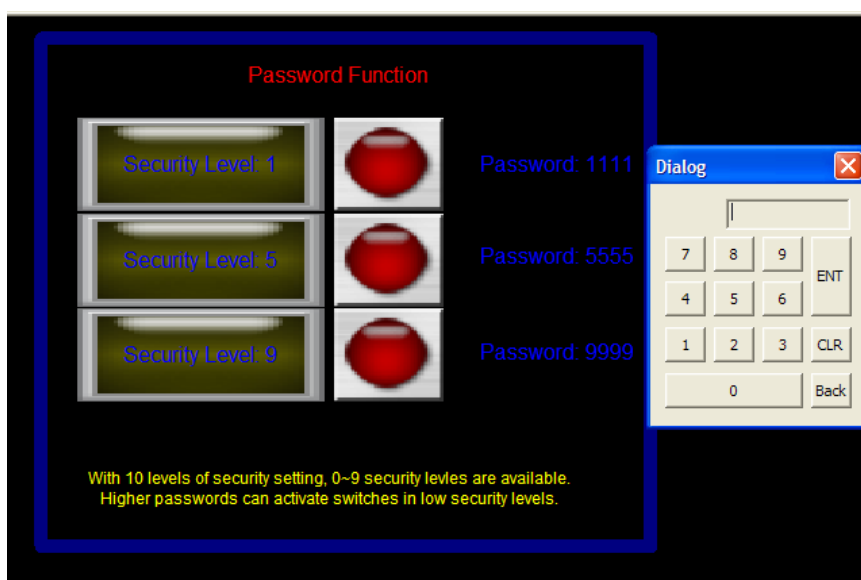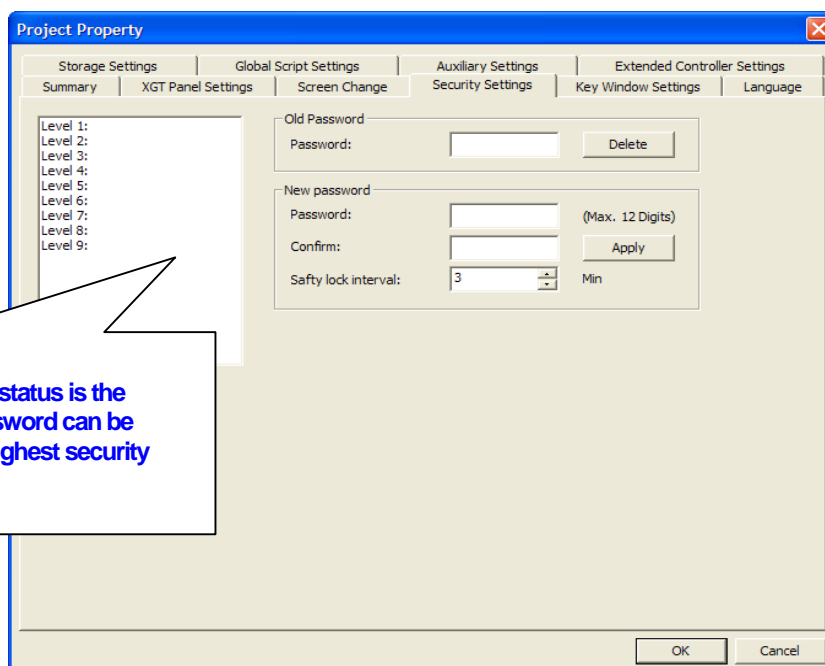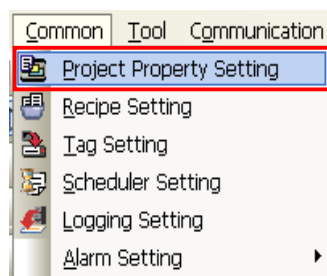

For your convenience and understanding, execute the sample data file called '2.Password.xpd" in XP-Builder.

2. Making the screen data

（1） Under the XP-Builder menu, select [Common]-[Project Property Setting]-[Security Setting].

STOP!
With 10 levels of security setting, level 0 status is the condition where nothing is set. The password can be arranged from level 1 to 9 which is the highest security level.

（2） Select the preferred level and enter passwords.

After choosing level 1, enter '1111' in the password and confirm areas.

If you don't press 'Apply' button, the password will not be activated.

Following the same procedures, enter below passwords through level 9.
- Level 2: 2222
- Level 3: 3333
- Level 4: 4444
- Level 5: 5555
- Level 6: 6666
- Level 7: 7777
- Level 8: 8888
- Level 9: 9999

STOP!
Password is limited to maximum of 12 letters. Only number is accepted for passwords.

（3） After selecting the Bit Switch on the screen, click [Extended]-[Detail]-[Security Level] and choose the preferred level.

(a) Set security level as '1'.

(b) Press 'OK'.

（4）Make a Bit Switch on the screen so that you will be able to check for its operation.

Bit Switch →　Security Level: 1　← Bit Lamp
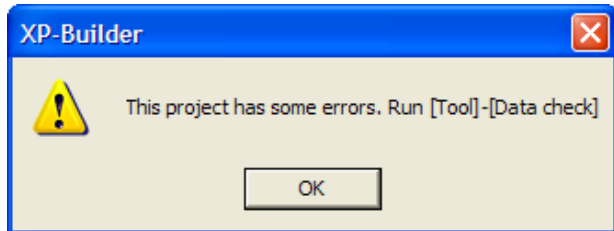
（5）Make 2 more switches and lamps following steps at (4).

Set security level as 1 →　Security Level: 1

Set security level as 5 →　Security Level: 5

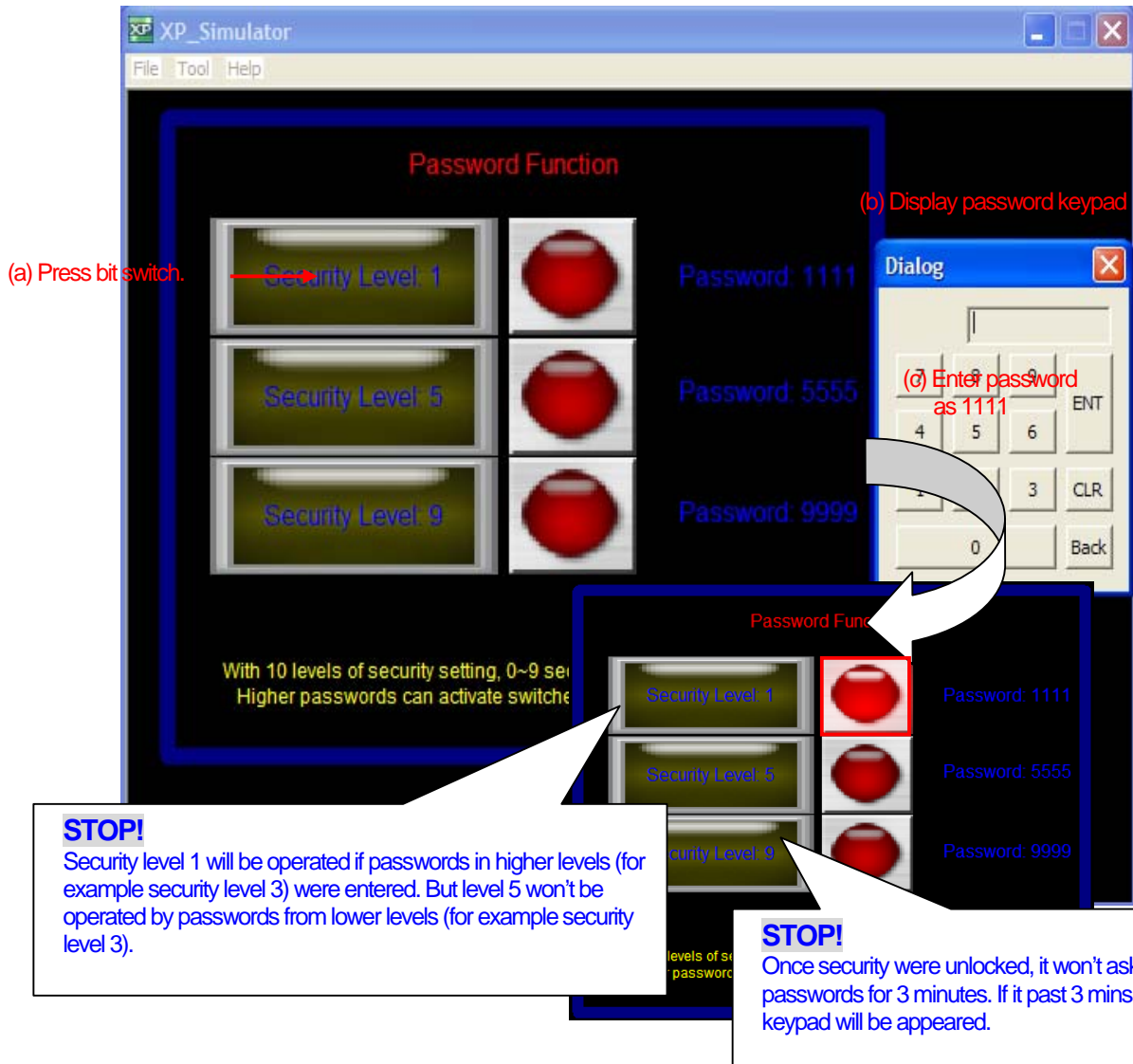Set security level as 9 →　Security Level: 9
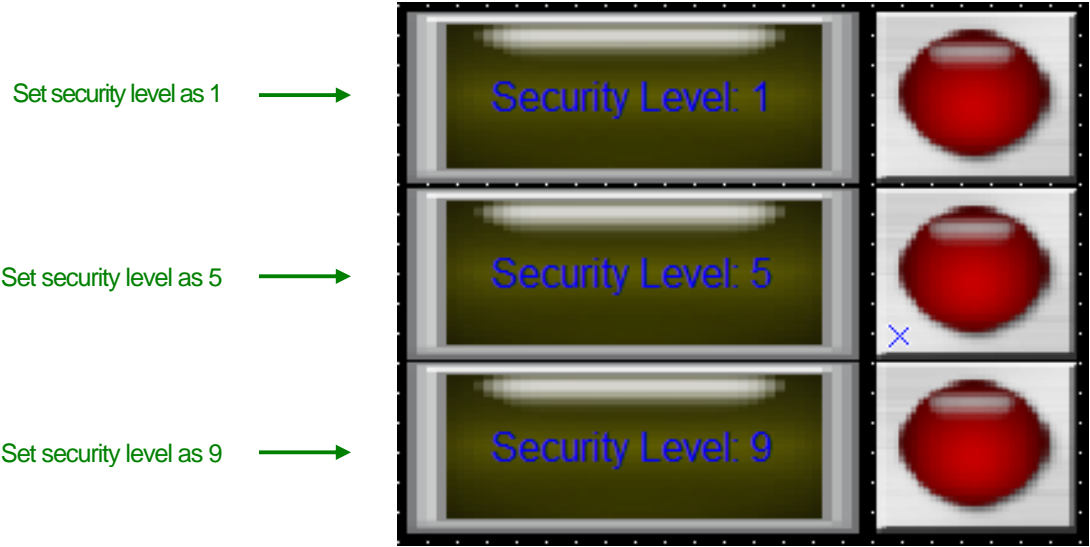
3. Verification through simulation

Among XP-Builder's toolbar [toolbar icons], select [icon]
The following message will be displayed if there are errors in the screen data.

In case of no errors, simulator will be operated like the below picture.

Password Function

(a) Press bit switch.

(b) Display password keypad

(c) Enter password as 1111

STOP!
Security level 1 will be operated if passwords in higher levels (for example security level 3) were entered. But level 5 won't be operated by passwords from lower levels (for example security level 3).

STOP!
Once security were unlocked, it won't ask for passwords for 3 minutes. If it past 3 mins, keypad will be appeared.

4. User tips!

☞ Password setting for numeric and text inputs

After positioning a numeric (or text) input on the screen, click [Extended]- [Detail] and select security levels. .
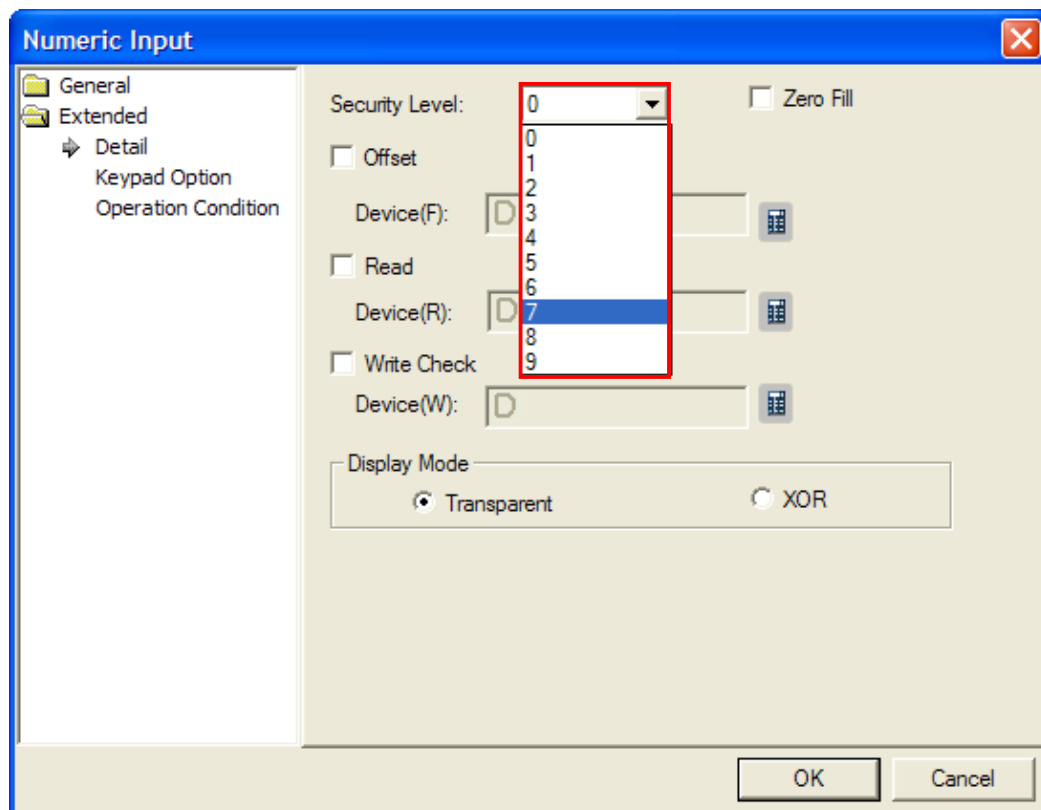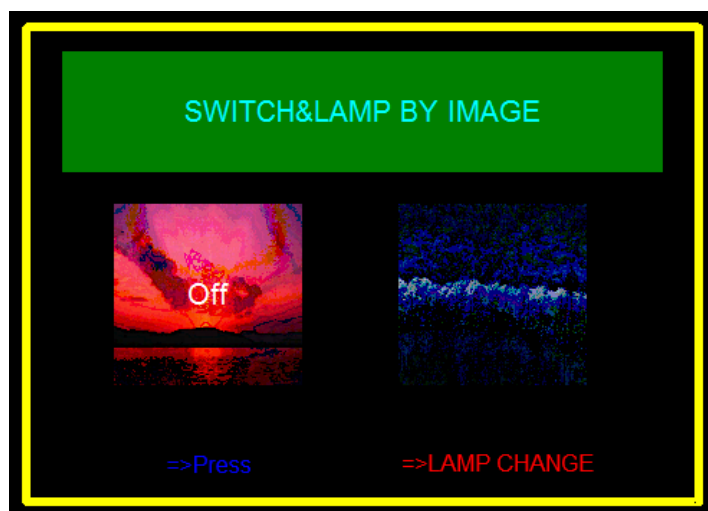
Using image files

1. Summary

XGT Panel supports a variety of image file types (BMP, JPG, GIF, WMF, PCX, ICO, etc) based on 6500 colors.
Specially, users can pick an image directly from the object. Thus diverse and beautiful data screens can be achieved.

Here, we will explain how to use bit switch and lamp briefly.
Executing the sample screen data 'use image files.xpd' at XP-Builder will help you understand.

2. Making the screen data

（1） Place a bit switch on the screen and select the displayed category. Press 'Open' in the screen.
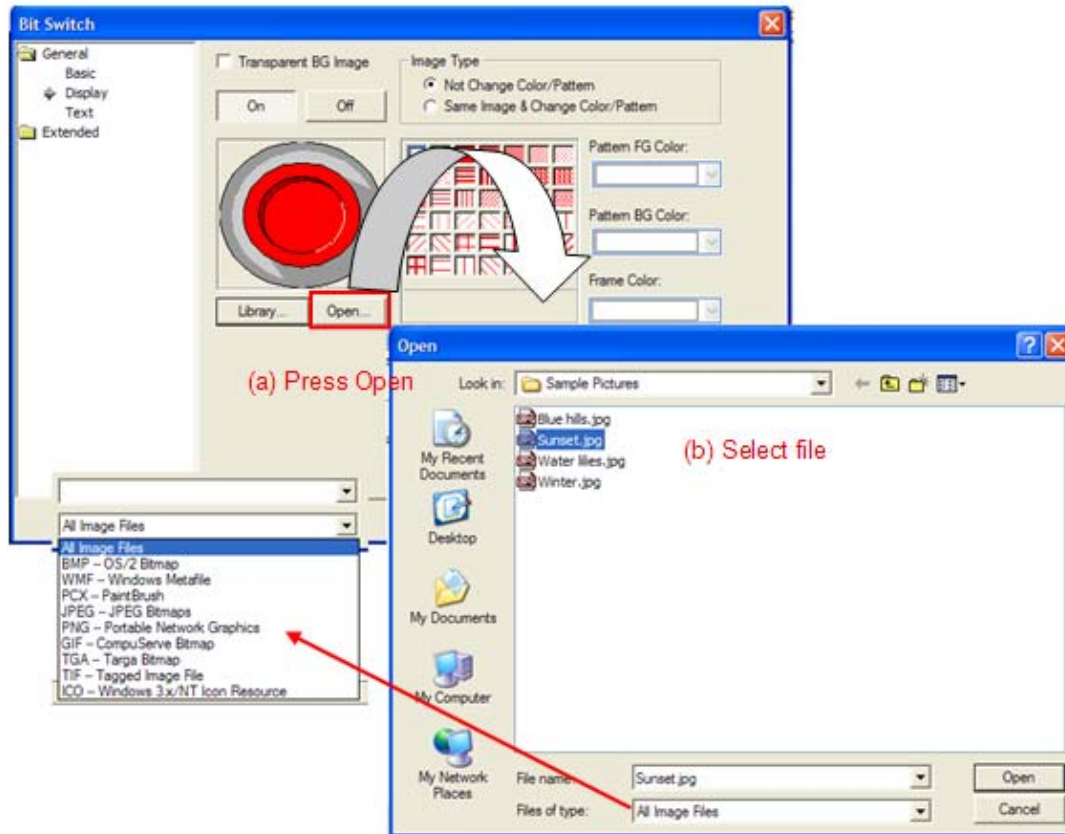
(2) Select the image that you would like to use. (Select each image for On/Off)

On status image

Off status image

(3) Enter any caption.

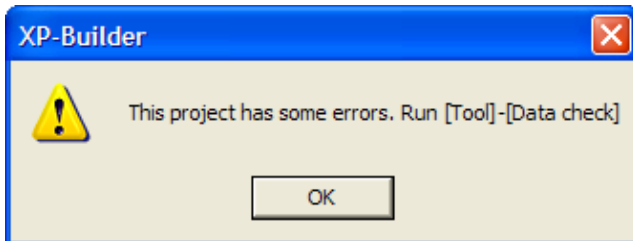(4) Create a bit lamp following above steps.

On status image

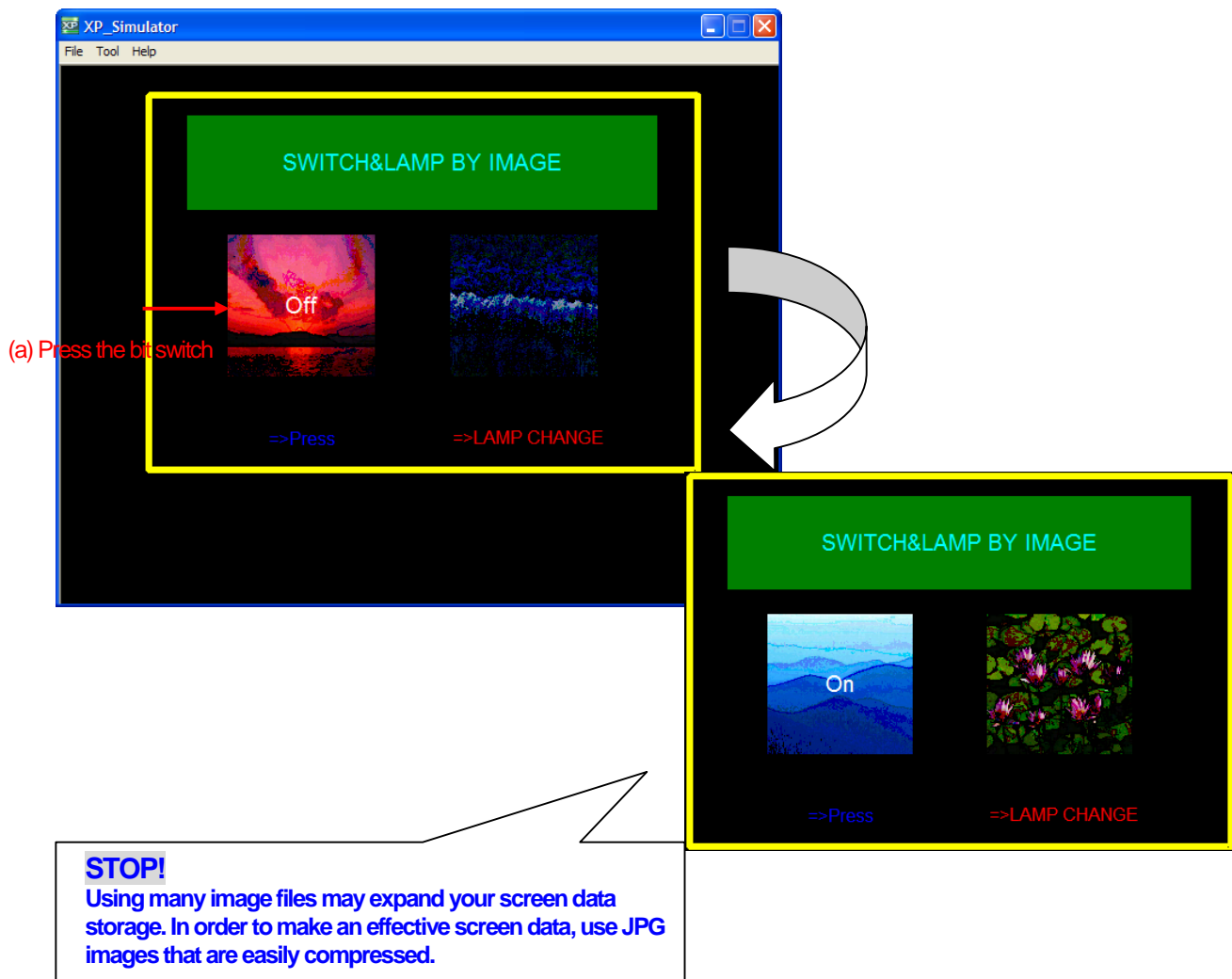Off status image

(5) Arrange it following above procedures.

3. Verify through simulations

Select this icon among XP-Builder's toolbar.
If there were errors in data screen, the following message will be displayed.

In case of no error, following simulator will be operated.

(a) Press the bit switch

SWITCH&LAMP BY IMAGE

Off

=>Press   =>LAMP CHANGE

SWITCH&LAMP BY IMAGE

On

=>Press   =>LAMP CHANGE

STOP!
Using many image files may expand your screen data storage. In order to make an effective screen data, use JPG images that are easily compressed.
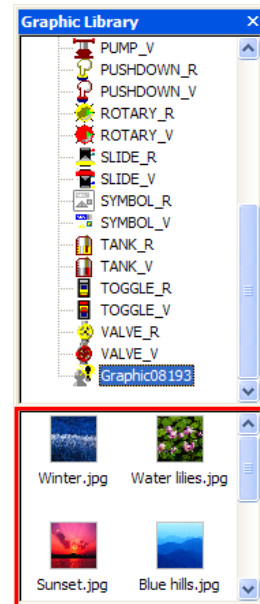
4. User tips!

☞ re-use images

If the image were used, it automatically registers in the graphic library.

(a) Select the graphic library icon from the tool bar.
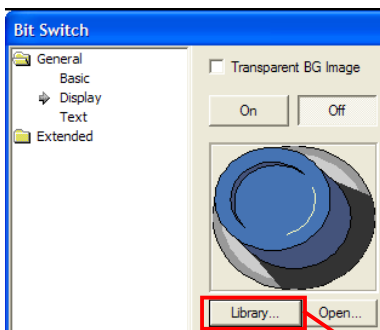   The Graphic library window will be displayed.

(b) Automatically appears in the user category

(c) Images that were used during the above process
    (1) ~ (4) will be saved.

Once images were registered to the graphic library, they can be used in other objects.
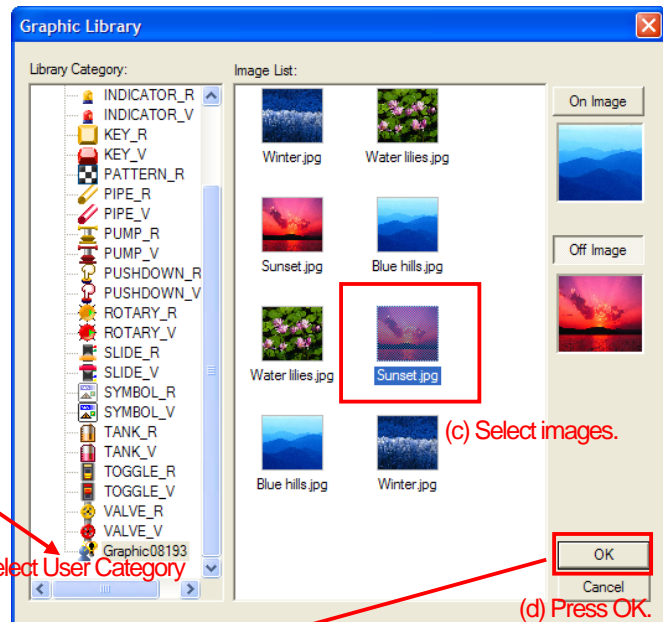
For instance, those images can be used following below procedures to make bit messages.
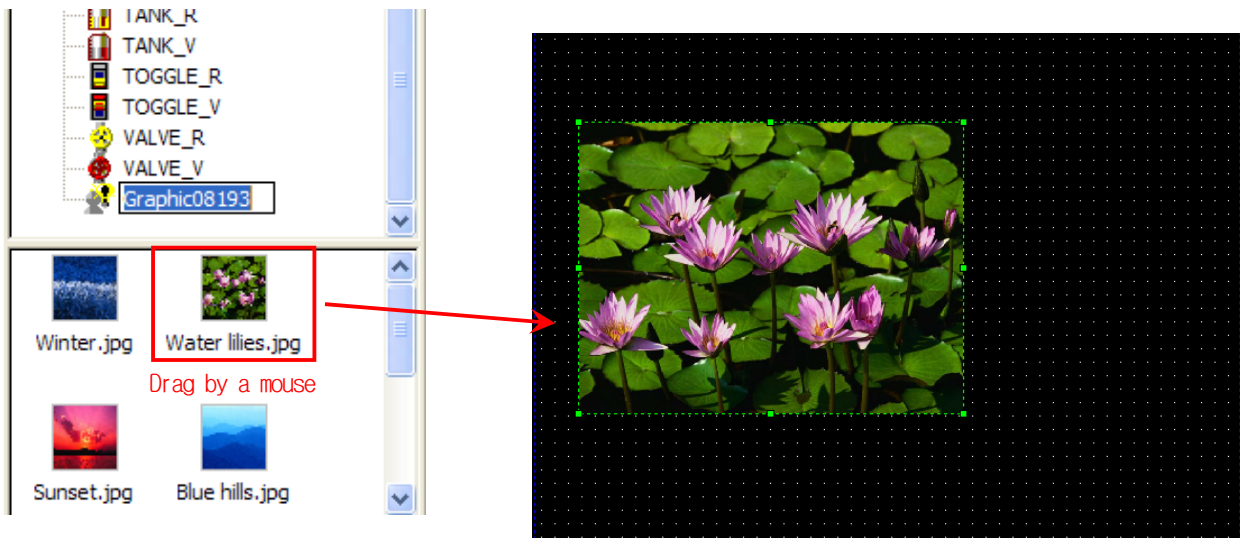
(a) Press Library

(b) Select User Category

(c) Select images.

(d) Press OK.

(e) The selected image will be displayed

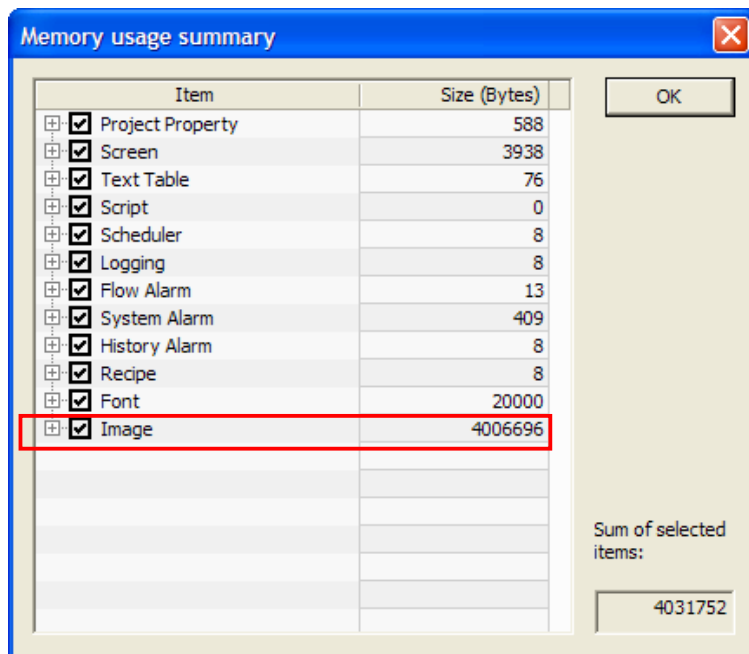Moreover images are not limited to object usages alone. It can also be utilized as a general picture.

☞ Checking memory space

For the case image files were used, you may have to check for memory space. XGT Panel's maximum allowance is 10MB. Thus exceeding its capacity will result in transfer-failures of screen data to XGT Panel.
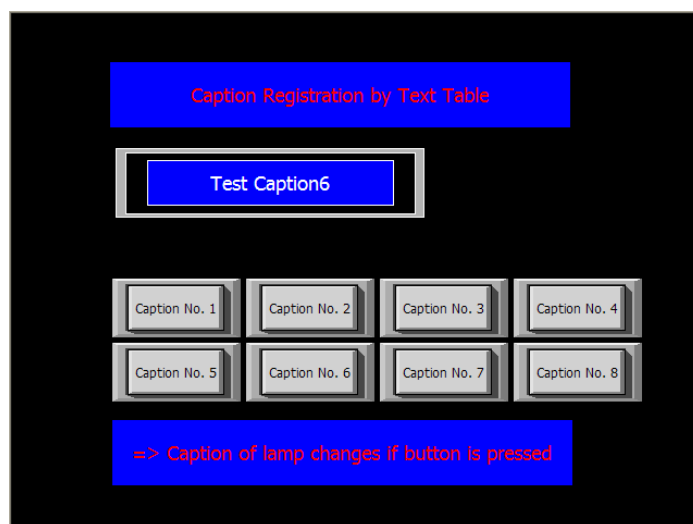
Press the icon ▤ from the toolbar

You will be able to check for current memory usage.

The way to register a caption by the text table.

1. Summary

XP-Builder supports the caption function on switches and lamps. This means that once registered captions in text table will be offered for your convenience.

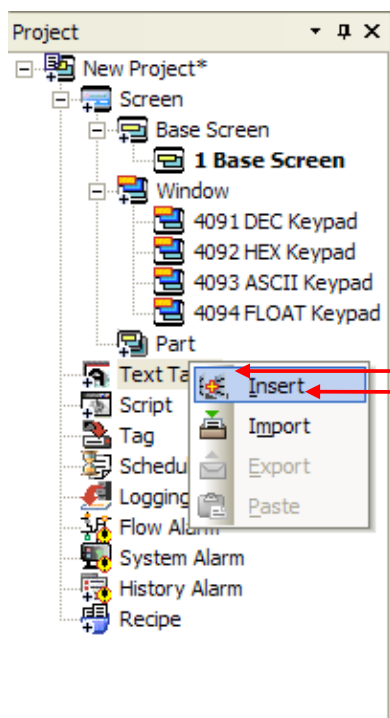Here, we will explain the example using word lamps.
For your understanding, execute the sample screen data called 'The way to register a text series caption.xpd' from XP-Builder.

2. Making the screen data

（1） Under the project window, select 'Text Table' and right-click on it. The below picture will be appeared.

(a) Right-click on 'Text Table'.

(b) Pressing 'Insert' will create a text table.

(2) From the generated text table, insert texts. You will be able to change the color and its property.

No	English (United States)	Color	Italic	Underline	StrikeOut	Bold
1	Test Caption		Off	Off	Off	Off
2	Test Caption1		Off	Off	Off	Off
3	Test Caption2		Off	Off	Off	Off
4	Test Caption3		Off	Off	Off	Off
5	Test Caption4		Off	Off	Off	Off
6	Test Caption5		Off	Off	Off	Off
7	Test Caption6		Off	Off	Off	Off
8	Test Caption7		Off	Off	Off	Off
9	Test Caption8		Off	Off	Off	Off

STOP!
The way to make modifications in 'Text Table' is similar to tasks in Microsoft excel. When you like to increase numbers in a row like the above or to make a copy, it is convenient.

No	English (United States)
1	Test Caption
2	
3	
4	
5	
6	
7	
8	
9	
10	

(a) Select it by a mouse.

(b) Drag downward while pressing left button of the mouse.

No	English (United States)
1	Test Caption
2	Test Caption1
3	Test Caption2
4	Test Caption3
5	Test Caption4
6	Test Caption5
7	Test Caption6
8	Test Caption7
9	Test Caption8
10	
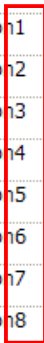
Texts are being copied and numbers increase in sequence.

（3） Upon finishing text inputs, place a word lamp on the screen. Register it under below conditions.

（4） Register texts.

(a) Select it.

(b) Select it.

(c) Select its
    condition.

STOP!
Set a text message for each case.

(d) Select the text which you
    would like to use.

(e) Select the text.
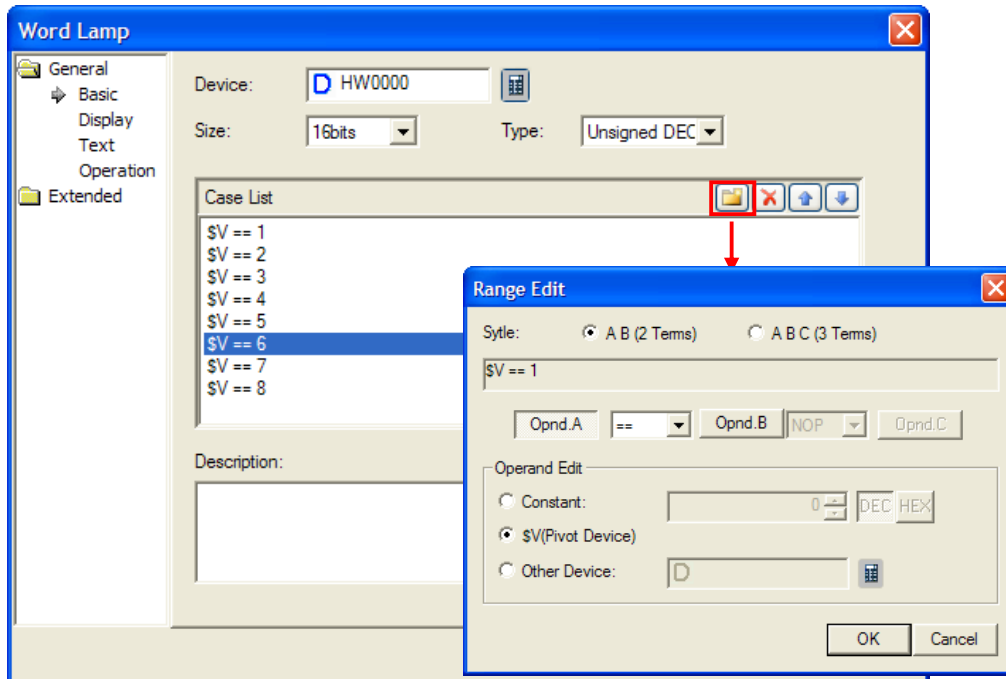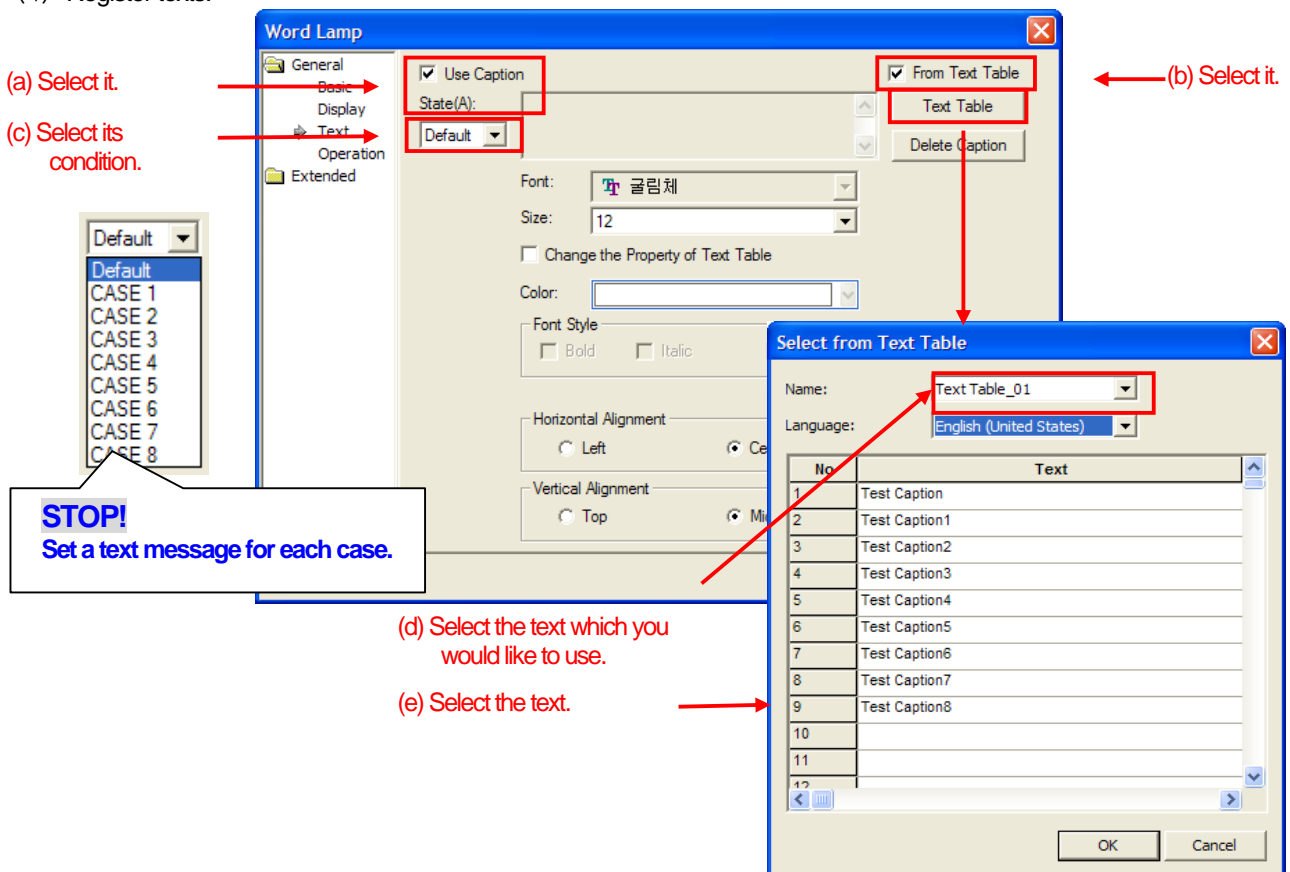
（5） Place word switches on the screen as below to confirm arranged text messages for each lamp.
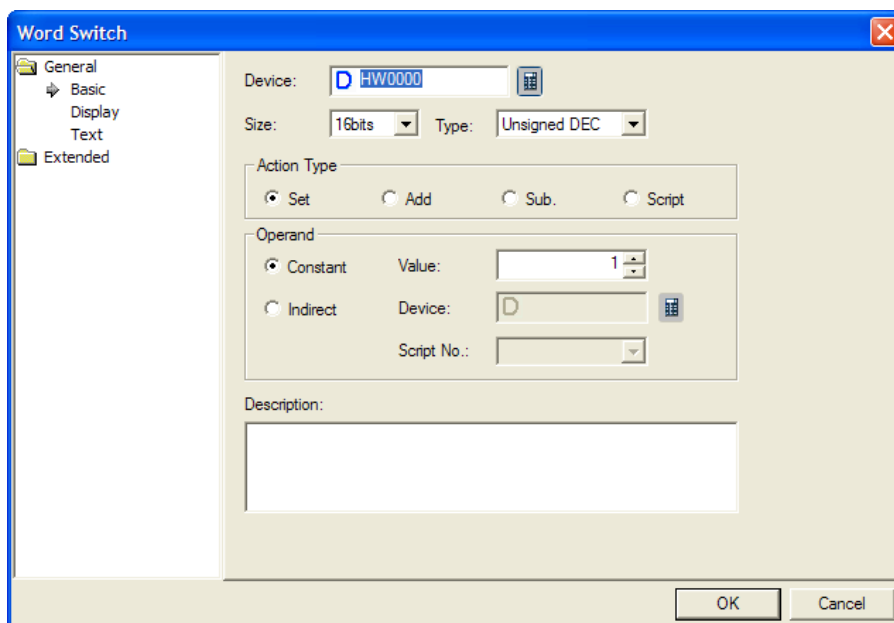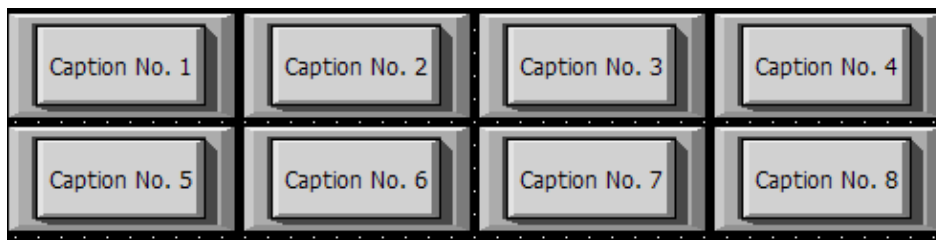
Caption No. 1	Caption No. 2	Caption No. 3	Caption No. 4
Caption No. 5	Caption No. 6	Caption No. 7	Caption No. 8

Word Switch

General
  Basic
  Display
  Text
Extended

Device: D HW0000

Size: 16bits   Type: Unsigned DEC

Action Type
○ Set   ○ Add   ○ Sub.   ○ Script

Operand
○ Constant   Value: 1
○ Indirect   Device: D
Script No.:

Description:

OK   Cancel

3. **Verify through simulations**

Select this icon ![icon] from this XP-Builder's toolbar ![toolbar].
If there were errors in data screen, the following message will be displayed.
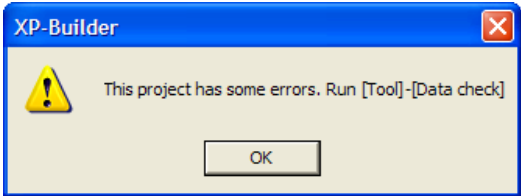
In case of no error, the simulator will be operated.
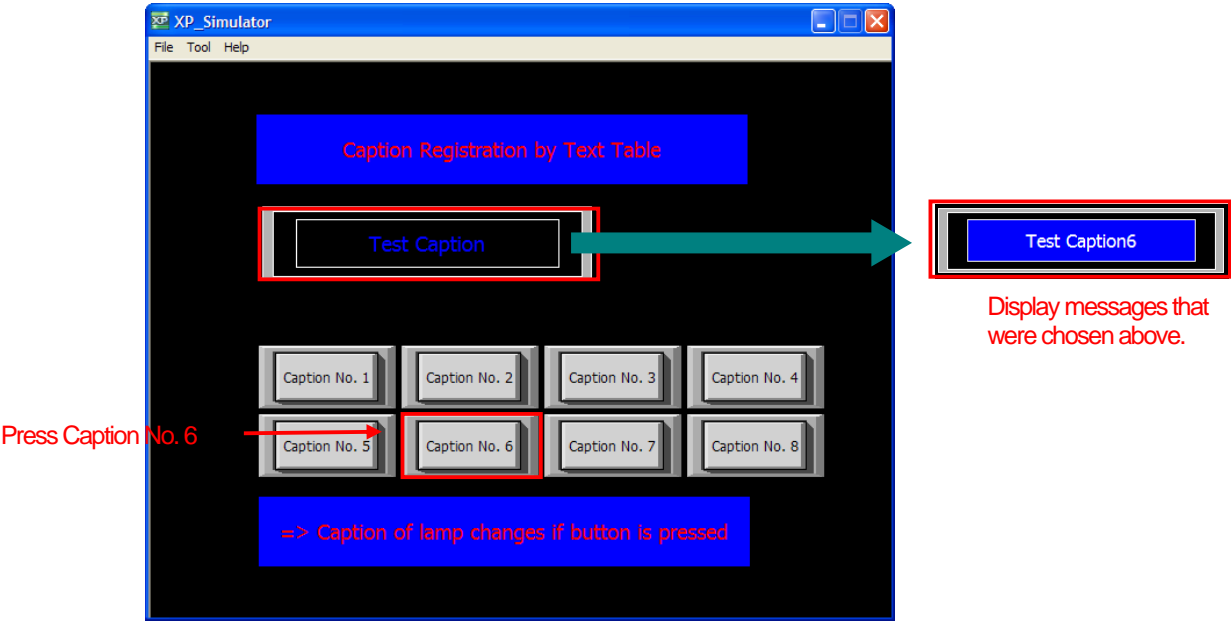
4. User tips!

☞ Export/Import a text table.
Export/Import functions are supported as an easy way to modify text tables.

(a) After selection of the text table, right-click and press Export.

(b) Enter a file name then save.

STOP!
It is saved as CSV file type so that modifications can be done through excel.

It is opened as below from Excel if created files were to be opened.

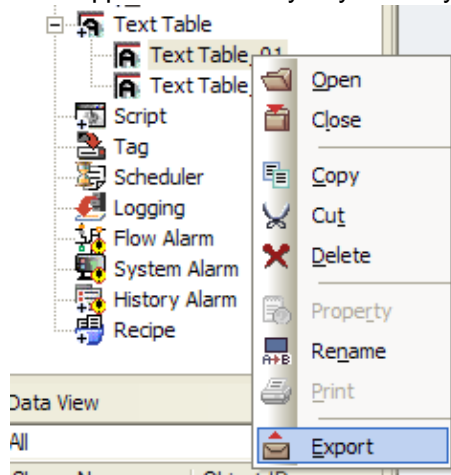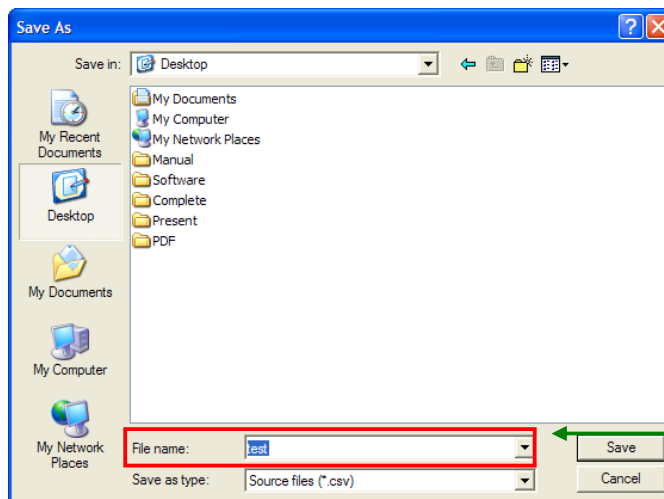|	A	B	C	D	E	F	G	H	I	J
1	# Text Table Export									
2	# Do not edit the below 2 line, These line indicate language codes,									
3	Text Table_01									
4	4	412	409	804	411					
5	#No	Korean	English (Un	Chinese (Pf	Japanese	Color	Italic	Underline	StrikeOut	Bold
6	9		Test Caption8			32768	Off	Off	Off	Off
7	8		Test Caption7			8388608	Off	Off	Off	Off
8	7		Test Caption6			16777215	Off	Off	Off	Off
9	6		Test Caption5			65535	Off	Off	Off	Off
10	5		Test Caption4			16711935	Off	Off	Off	Off
11	4		Test Caption3			255	Off	Off	Off	Off
12	3		Test Caption2			16776960	Off	Off	Off	Off
13	2		Test Caption1			65280	Off	Off	Off	Off
14	1		Test Caption			16711680	Off	Off	Off	Off

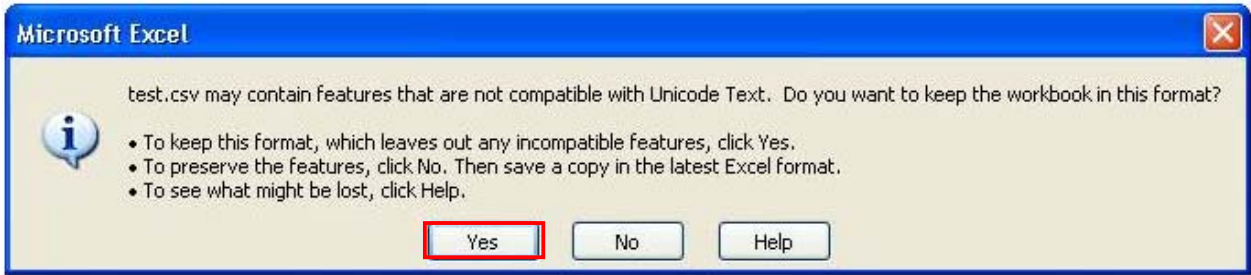|	A	B	C	D	E	F	G	H	I	J
1	# Text Table Export									
2	# Do not edit the below 2 line, These line indicate language codes,									
3	Text Table_01									
4	4	412	409	804	411					
5	#No	Korean	English (Un	Chinese (Pf	Japanese	Color	Italic	Underline	StrikeOut	Bold
6	9		Test Caption8			32768	Off	Off	Off	Off
7	8		Test Caption7			8388608	Off	Off	Off	Off
8	7		Test Caption6			16777215	Off	Off	Off	Off
9	6		Test Caption5			65535	Off	Off	Off	Off
10	5		Test Caption4			16711935	Off	Off	Off	Off
11	4		Test Caption3			255	Off	Off	Off	Off
12	3		Test Caption2			16776960	Off	Off	Off	Off
13	2		Test Caption1			65280	Off	Off	Off	Off
14	1		Test Caption			16711680	Off	Off	Off	Off

(b) Enter Texts

(c) Choose colors and text type properties.
The color value is between 0 ~ 16,777,215.
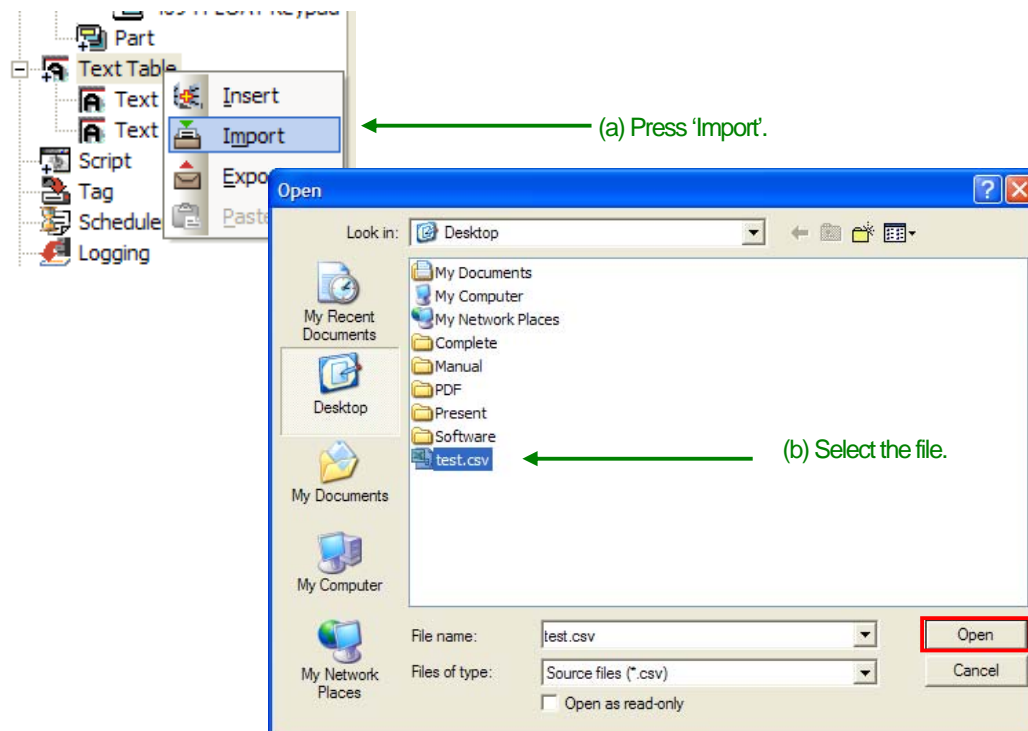To active attributed characteristics, select 'ON'. Otherwise select 'OFF".

(a) Enter table numbers.
Don't put the same table number over again.
It may cause errors in the XP-Builder.

STOP!
The black is set to 0. And white is set to 16,777,215.
Red(R) is 255,
Yellow(Y) is 65535,
Blue(B) is 65280,
Green(G) is 16711680.

Once modifications were done, save it.
During saving process, message will be occurred as below, choose 'yes'.

Microsoft Excel

test.csv may contain features that are not compatible with Unicode Text. Do you want to keep the workbook in this format?

- To keep this format, which leaves out any incompatible features, click Yes.
- To preserve the features, click No. Then save a copy in the latest Excel format.
- To see what might be lost, click Help.

[Yes]   No   Help

Import files from XP-Builder as below. Please close the file prior to importing.

(a) Press 'Import'.

(b) Select the file.

Selected files are registered in text tables.

No	English (United States)	Color	Italic	Underline	StrikeOut	Bold
1	Test Caption		Off	Off	Off	Off
2	Test Caption1		Off	Off	Off	Off
3	Test Caption2		Off	Off	Off	Off
4	Test Caption3		Off	Off	Off	Off
5	Test Caption4		Off	Off	Off	Off
6	Test Caption5		Off	Off	Off	Off
7	Test Caption6		Off	Off	Off	Off
8	Test Caption7		Off	Off	Off	Off
9	Test Caption8		Off	Off	Off	Off

# Language selection function by special switches

1. Summary

XP-Builder is capable of displaying or converting into 4 different languages at once. Two ways to change a language setting are offered; here we will explain how to change a language setting by special switches.
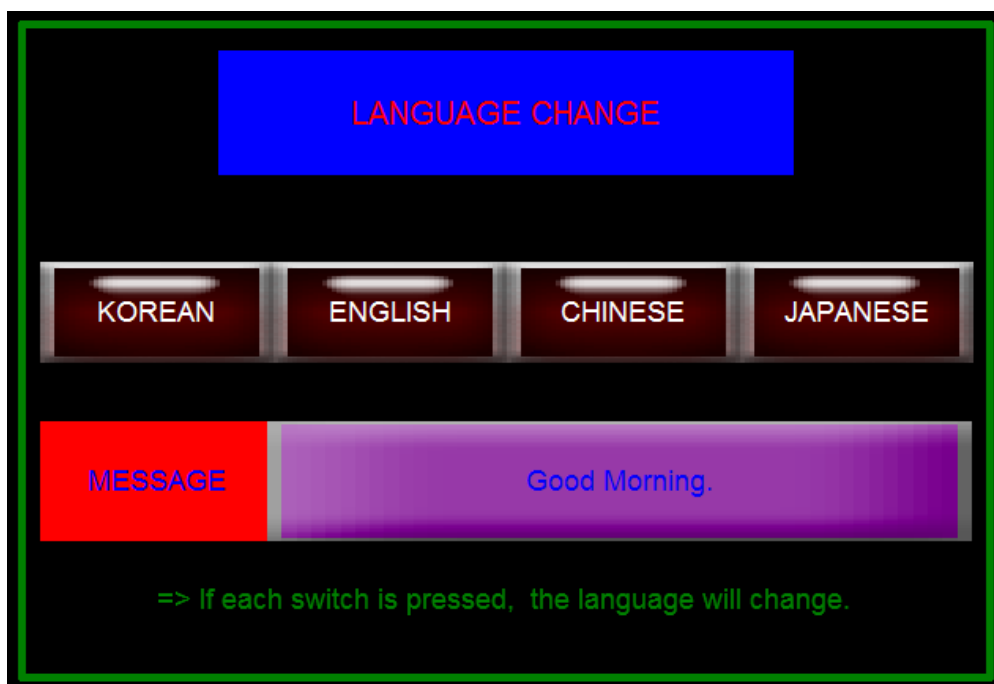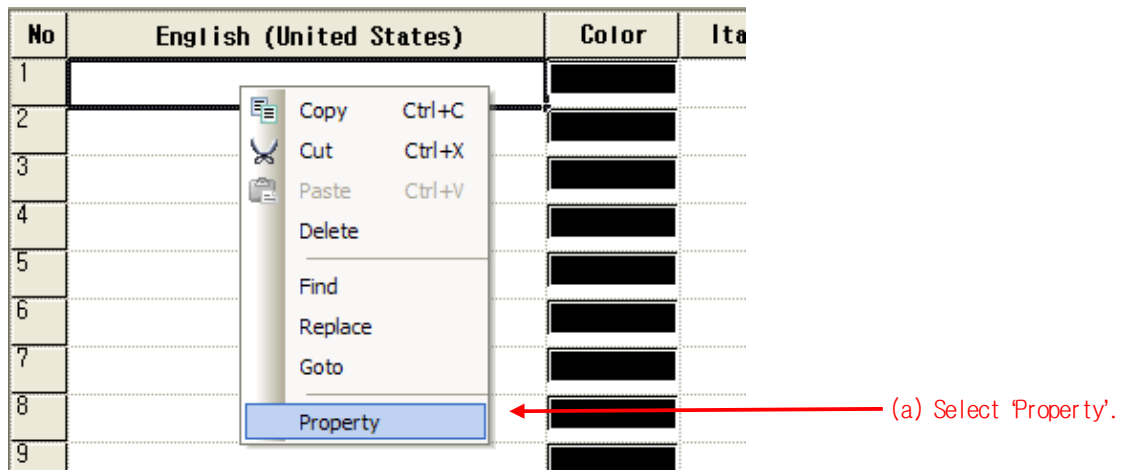

For your understanding, execute the sample data called 'language selection function (special device).xpd' from XP-Builder.
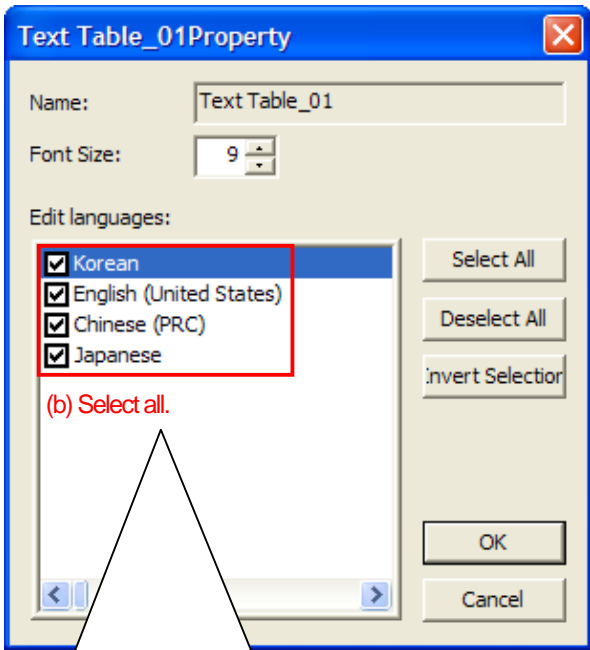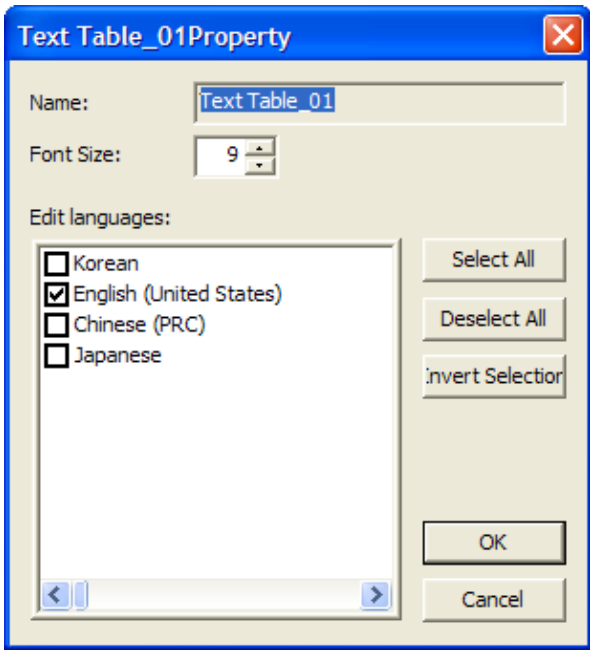
2. Making the screen data

(1) From the project window, select text table. The below picture is displayed when you right-click on it

(a) Right-click on text table.
(b) Text Table is created by selecting 'Insert'.
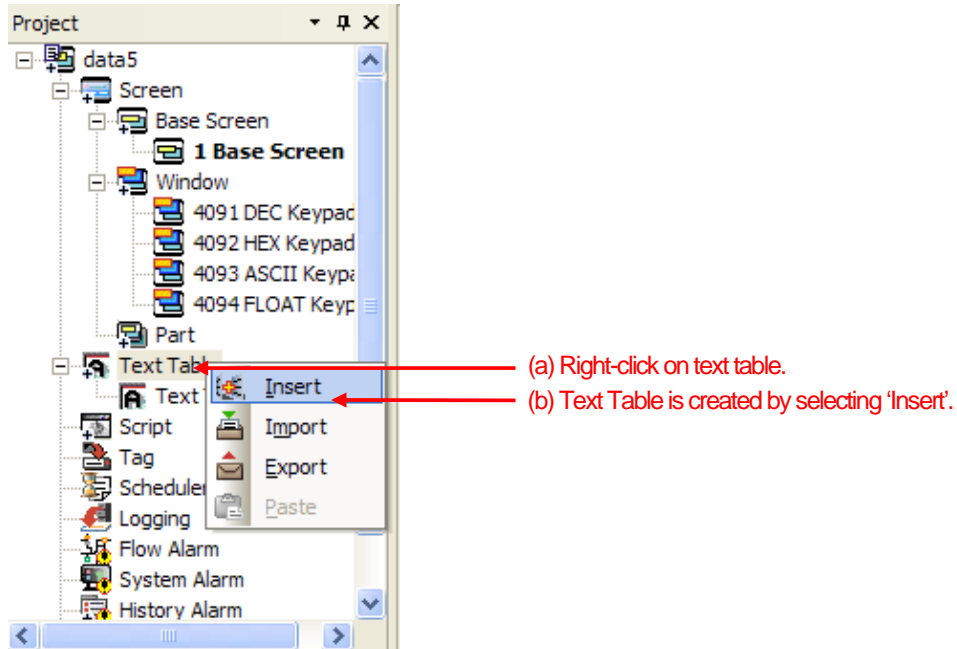
(2) From the text table, select 'Property' after the right click.

(a) Select 'Property'.

Text Table_01Property

Name: Text Table_01

Font Size: 9

Edit languages:
- ☐ Korean
- ☑ English (United States)
- ☐ Chinese (PRC)
- ☐ Japanese

Select All
Deselect All
Invert Selection
OK
Cancel

Text Table_01Property

Name: Text Table_01

Font Size: 9

Edit languages:
- ☑ Korean
- ☑ English (United States)
- ☑ Chinese (PRC)
- ☑ Japanese

(b) Select all.

Select All
Deselect All
Invert Selection
OK
Cancel

STOP!
To support 4 different languages at once, follow this steps: 'Menu → Common→ Project Property → Language'

Project Property

| Storage Settings | Global Script Settings | Auxiliary Settings | Extended Controller Settings |
| Summary | XGT Panel Settings | Screen Change | Security Settings | Key Window Settings | Language |

Editing Language List:

Language	Default Font
English (United S...	Arial
Korean	굴림체
Chinese (PRC)	SimSun
Japanese	MS PGothic

Add >>
Remove <<

Runtime Language List:

No	Language
0	Korean
1	English (United States)
2	Chinese (PRC)
3	Japanese

Runtime Language Settings
☐ Language Change by Device
Device:
D

Default Runtime Language:
English (United States)

Add New...   Delete

Editing Language Settings

Default Editing
English (United States)

OK

Support Language List

- Arabic (Saudi Arabia)
- Chinese (Taiwan)
- Danish
- Dutch (Belgium)
- Dutch (Netherlands)
- English (Canada)
- Finnish
- French (France)
- German (Germany)
- Greek
- Hebrew
- Hungarian
- Italian (Italy)
- Kannada
- Norwegian (Bokmal)
- Polish
- Portuguese (Portugal)
- Russian
- Spanish (International Sort)
- Spanish (Traditional Sort)
- Swedish

OK
Cancel

(3) Enter text messages based on each language.

No	Korean	English (United States)	Chinese (PRC)	Japanese	Color	Italic
1	안녕하세요.	Good Morning.	你好	こんにちは		Off
2						

(4) Once text messages were written, place bit messages on the screen. Then register texts.

Bit Message

General
    Basic
    Display
➡ Text
Extended

On   Off
Text Table
On ->Off Copy   Size: 18   Blink: Not Use
Delete On Msg.

Good Morning.

☐ Change the Property of Text Table
   Color:
   Font Style
☐ Strikeout ☐ Underline

Center   ⦿ Right
Middle   ⦿ Bottom

OK   Cancel

Select from Text Table

Name: Text Table_01
Language: English (United States)

No	Text
1	Good Morning.
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

OK   Cancel

Good Morning.

(5) In order to verify whether each language displays properly, select other languages from this category English (United S ▼

among these icons ☐ ☐ ☐ Default ▼ | English (United S ▼ .
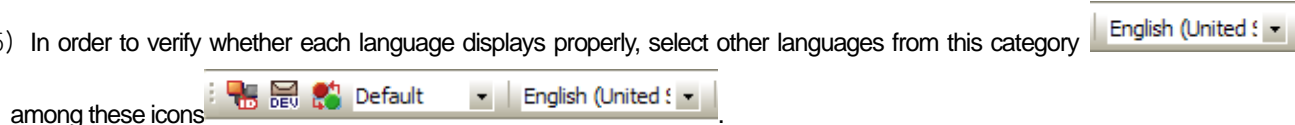
(6) After placing special switches on the screen, select 'Change Runtime Language' among special function list.
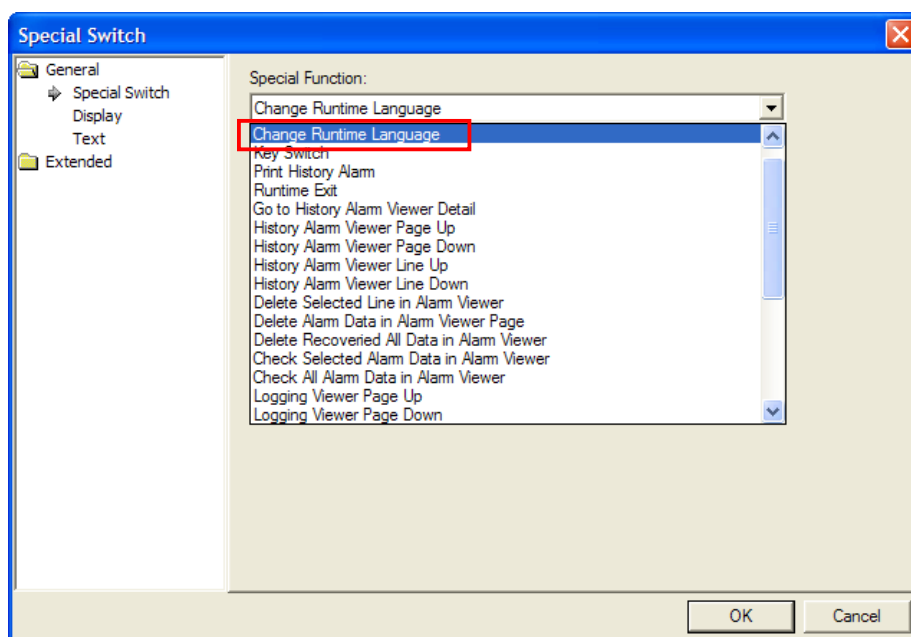
(7) By selecting a 'Change Runtime Language', you can choose a language. Make 4 switches based on each language.
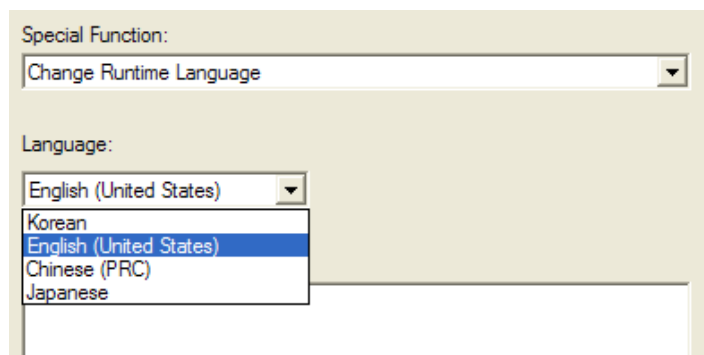
STOP!
Arranging texts as above will come in handy when you use these functions.

3. **Verify through simulations**

Select this icon ![icon] from this XP-Builder's toolbar ![toolbar].
If there were errors in data screen, the following message will be displayed.
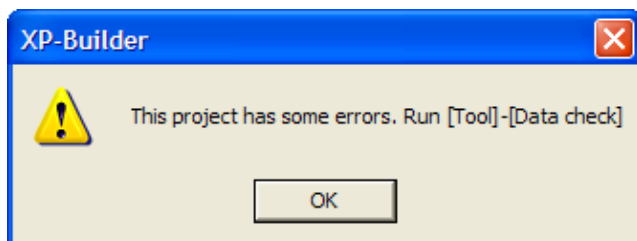
In case of no error, the simulator will be operated.
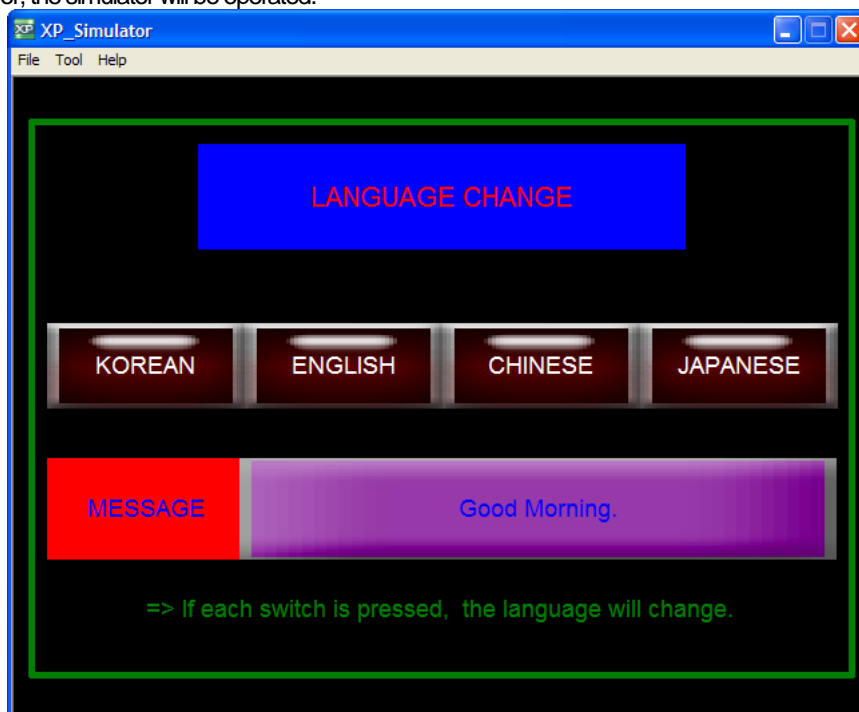
Upon selecting on special switches, applicable languages will be displayed.
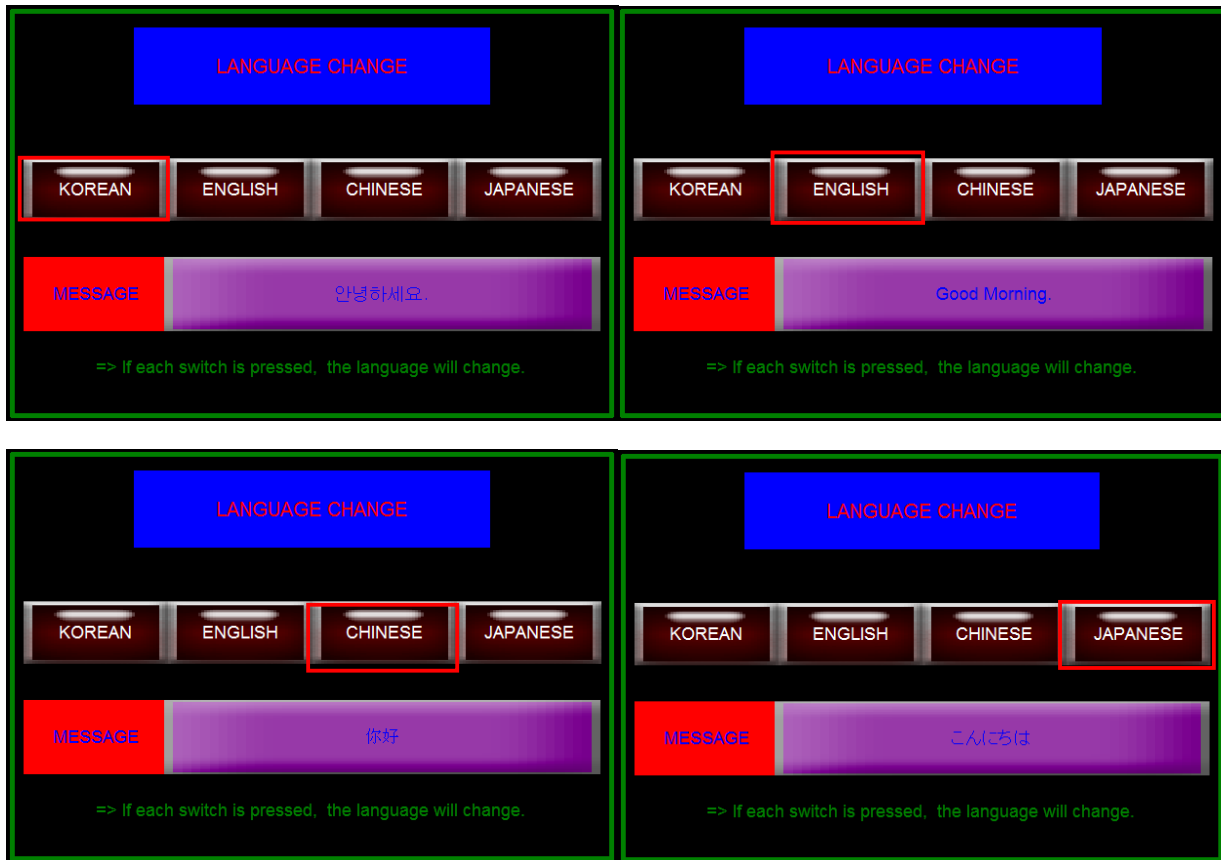
4. **User tips!**

☞ Language selection function is also possible through changes in device.
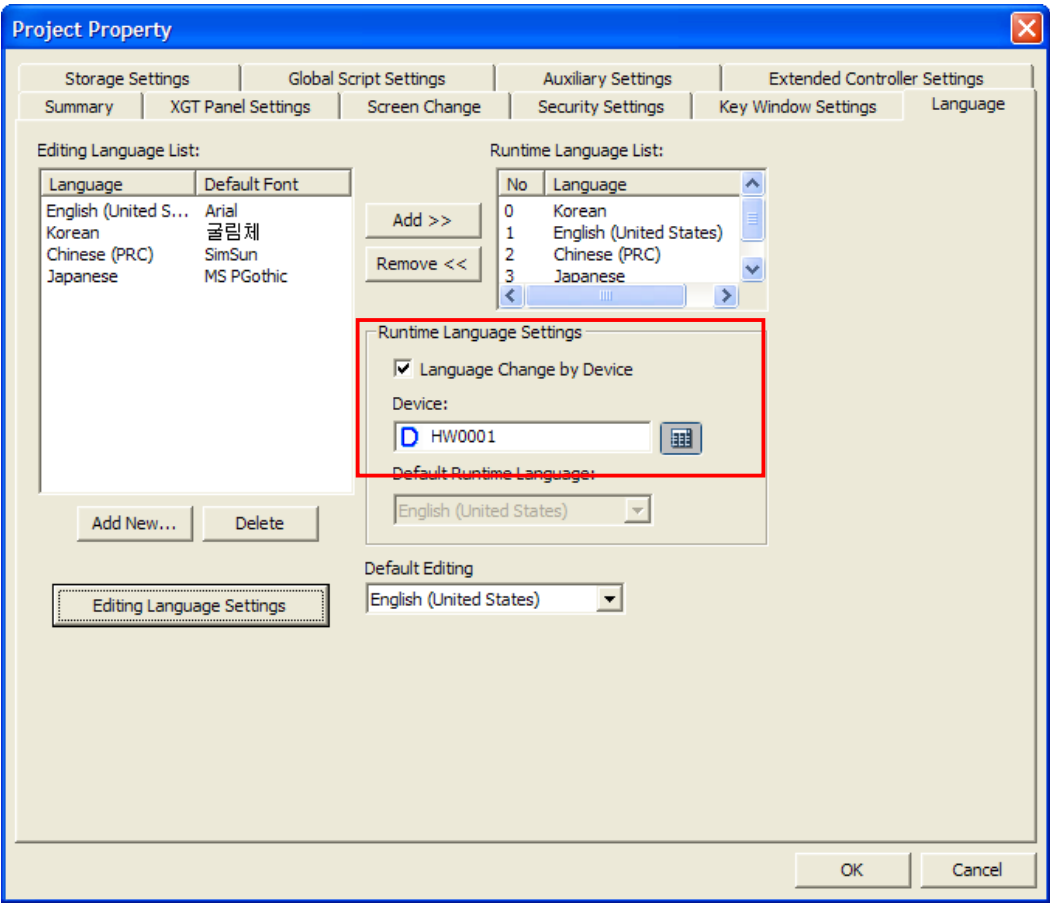
Select 'Language Change by Device' under 'Project Property → Language Settings' '
Also enter a runtime language setting device.

Language will be changed depending on runtime language device values (0 through 3) as below.

Screen change through device

1. Summary

Although a switch is often used for changing a screen, in cases that users want to change screens from PLC or they would like to be informed of current screen numbers, at this time screen change function though device can be applied as easy and convenient way.
Even if the screen change takes place through its switch, the device will be operated and display current screen numbers.
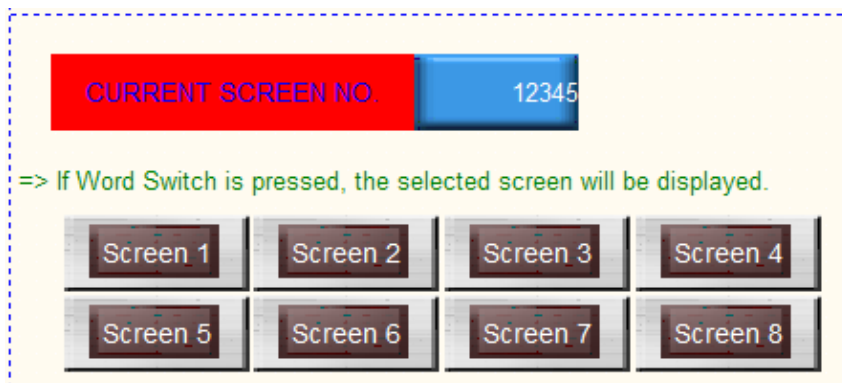
For your understanding, execute the sample data called 'screen change through device. xpd' from XP-Builder.

2. Making screen date

（1） Select 'Project Property Setting' from the menu.

(a) Select Project Property Setting
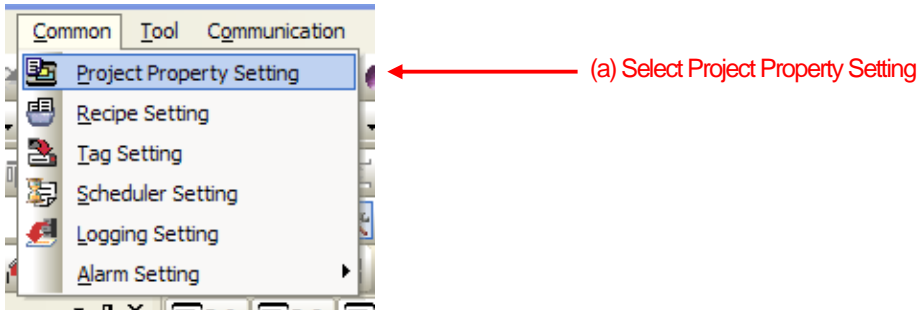
（2） Select 'Screen Change' under the project property.

(a) Select 'Screen Change' tab.

(b) Check 'Use Change device'

(c) Enter a device after selecting 'Base Window'

STOP!
It should be entered in word device format. Bit device can not be used. This device value will be used for screen numbers.
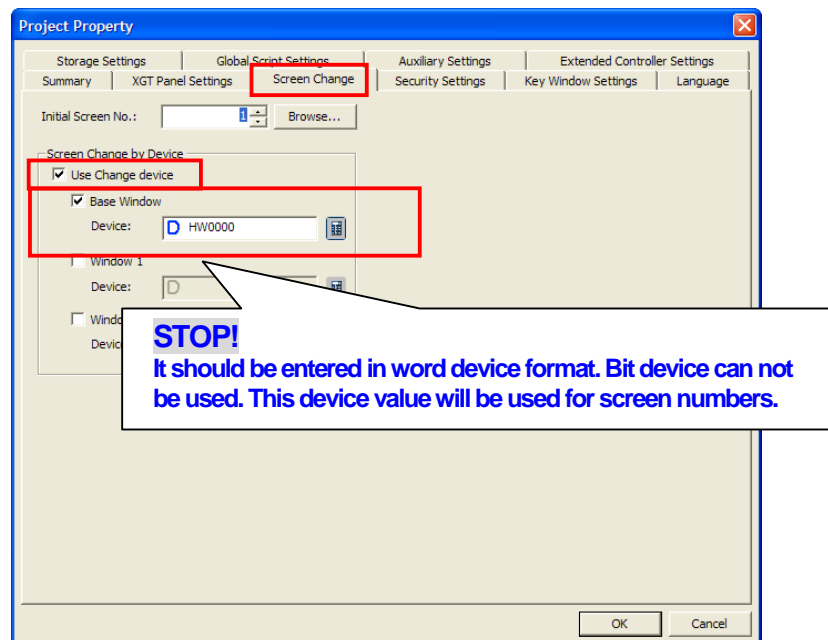
（3） Make several screens.
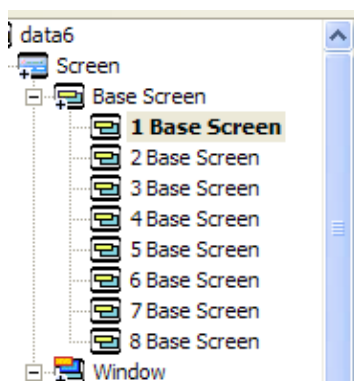
（4） Place numeric inputs on screen.

CURRENT SCREEN NO.   12345

Numeric Display

General
→ Basic
Display
Text
Display Case
Operation
Extended

Device: D HW0000

Size: 16bits

STOP!
Enter the same device address which you used at (2).

Display Format
Numeric Format:
No. of Display Digits: 5
No.of Decimal Digits: 0

☐ Use Scaling

Description:

OK   Cancel
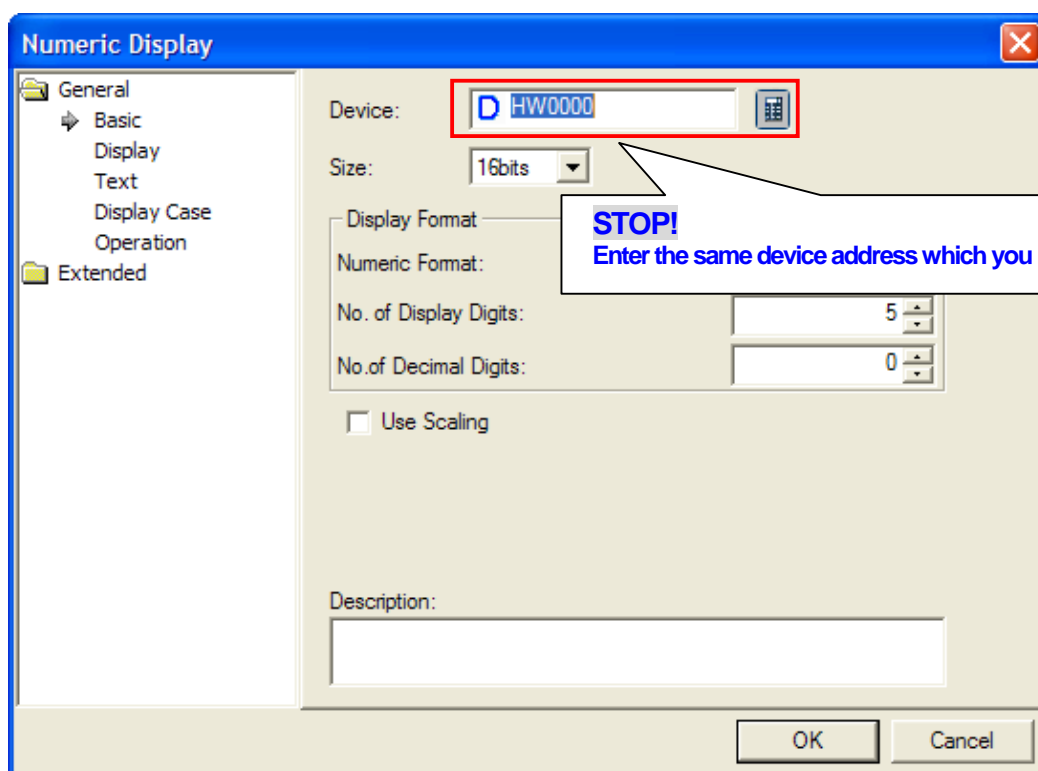
(5) Place word switches on the screen as below.
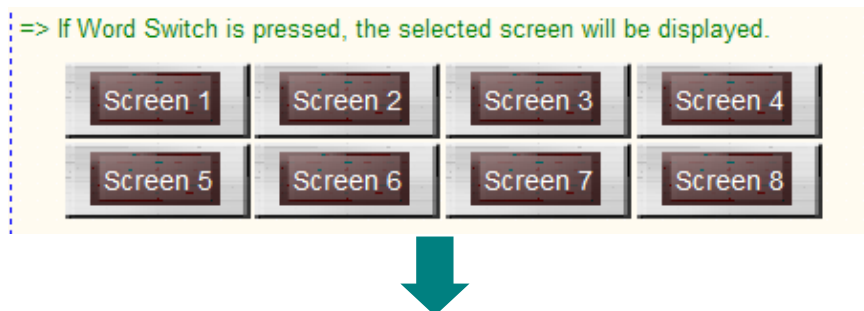
(a) Enter the same address with (2).

(b) Select 'Set' under action type.

(c) Enter a screen number which you desire to change
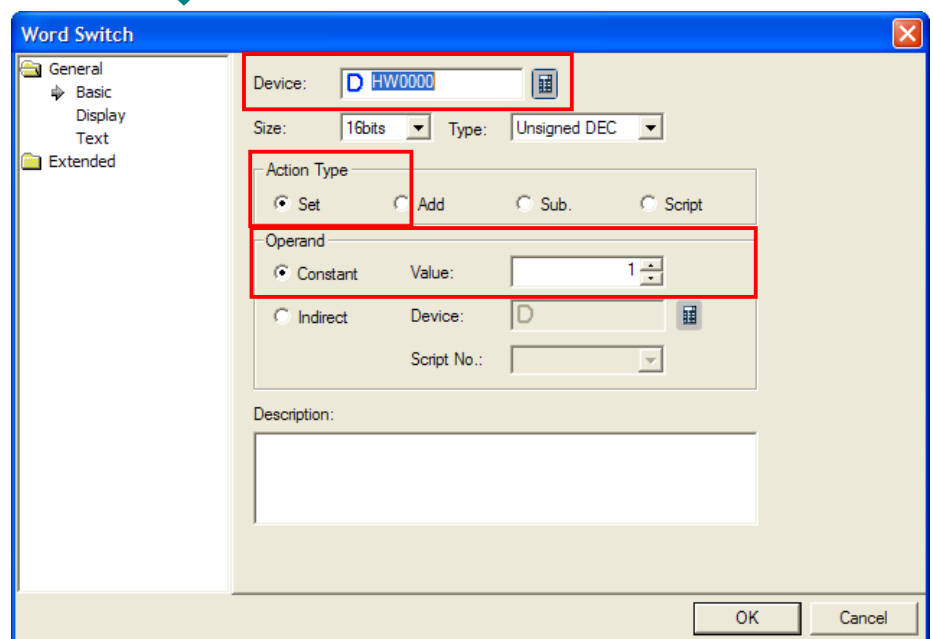
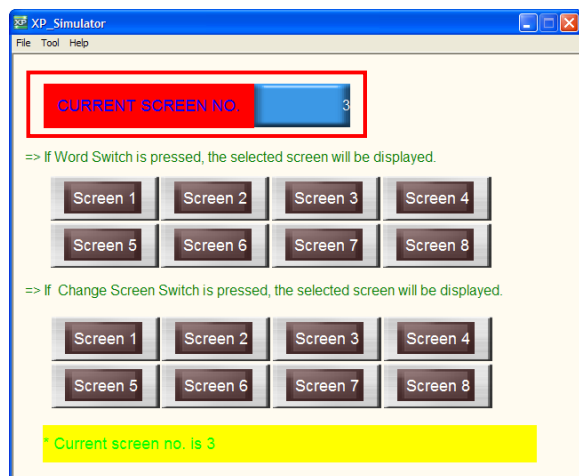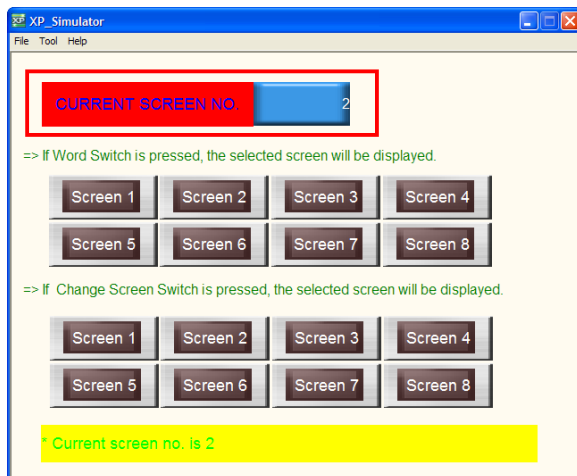## 3.   Verify through simulations

Select this icon [icon] from this XP-Builder's toolbar [toolbar icons].
If there were errors in data screen, the following message will be displayed.
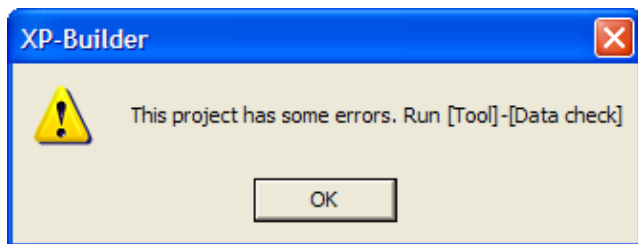
In case of no error, the simulator will be operated.
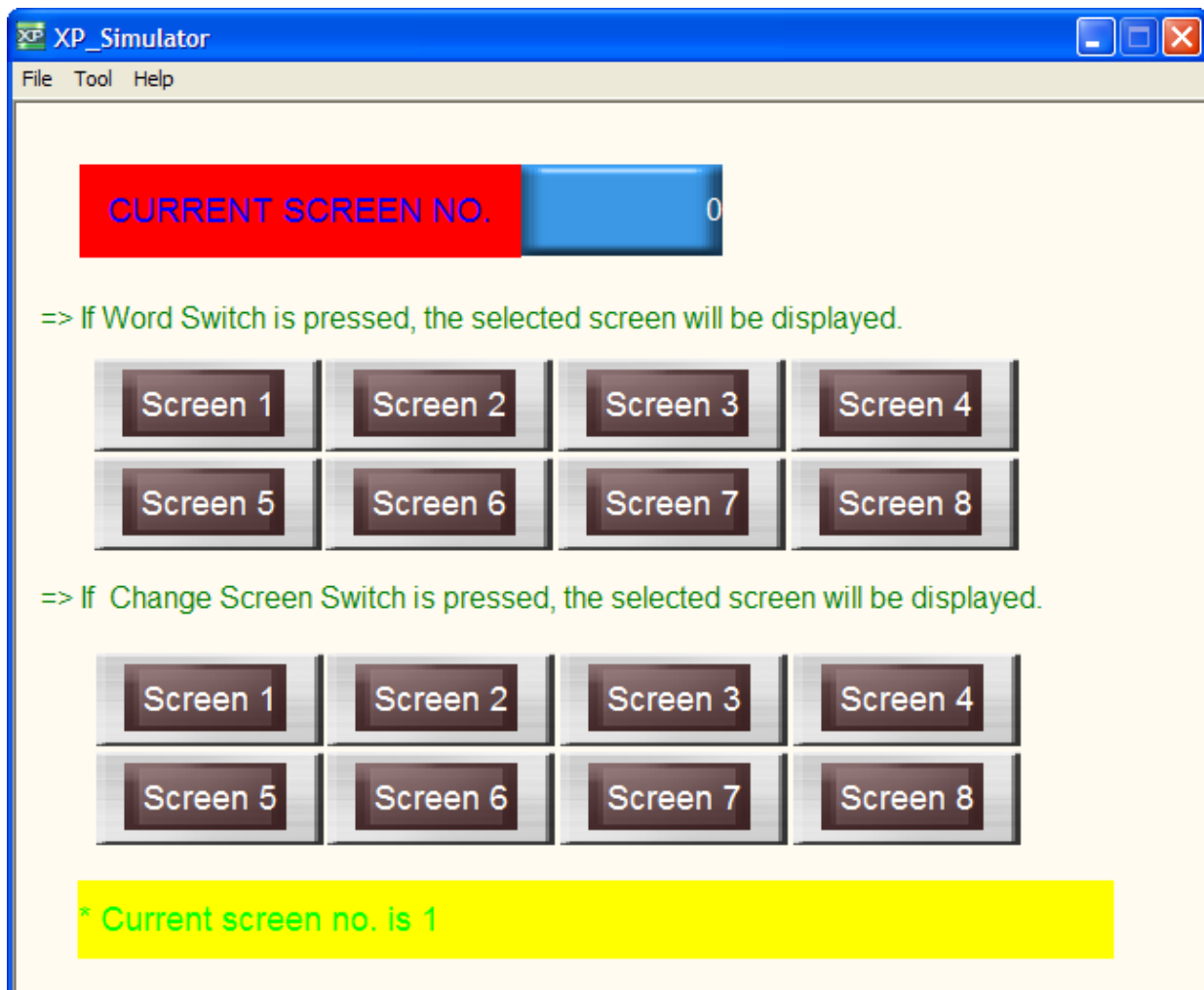
By pressing a word switch, the selected screen will be displayed.
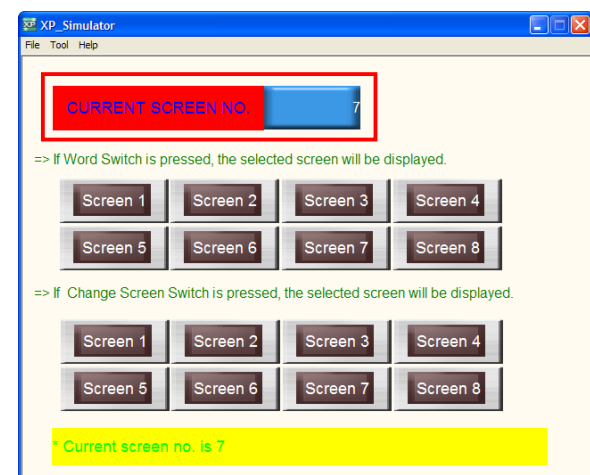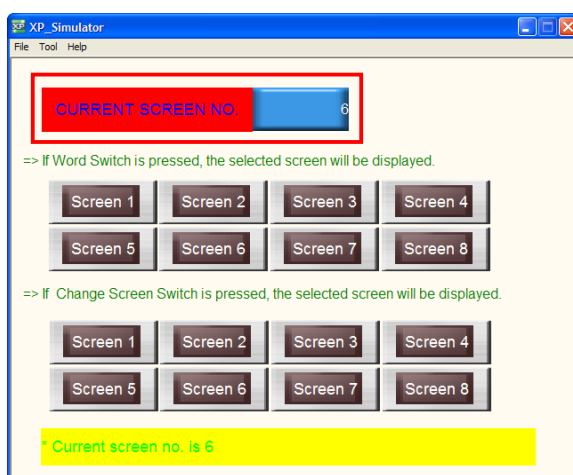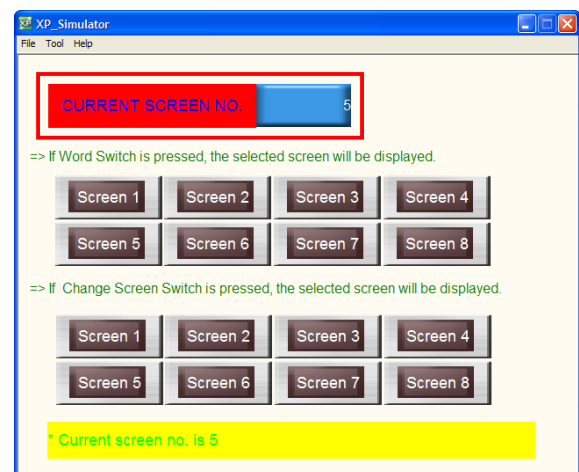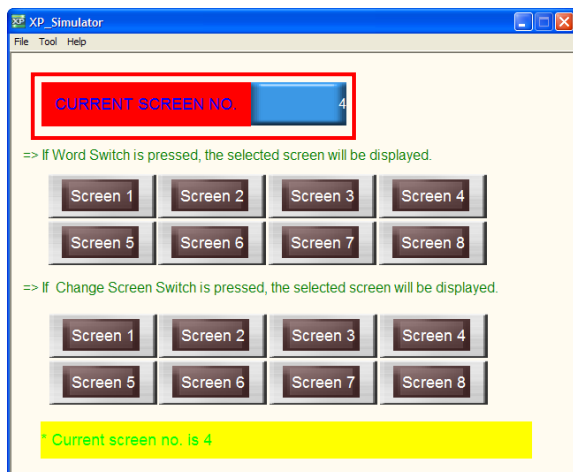
4. User tips!

☞ Contact point output using scripts under screen changes

There is a drawback to screen change operations in PLC which requires additional contact point outputs in order to process word values in the program. Thus using global script functions can minimize program loads when monitoring screen change devices values from PLC solely.

First, write scripts as below.

```
unsigned int page;   //Creat temporary variable called page
page=@[W:HW0];       //Save the device value for the screen change to temporary variable
if(page==1){         //In case of no.1 screen
    @[X:HX0]=1;      //This contact point outputs 1
    @[X:HX1]=0;      //Others output 0
    @[X:HX2]=0;
    @[X:HX3]=0;
    @[X:HX4]=0;
    @[X:HX5]=0;
}
else if(page==2){    //In case of no.2 screen
    @[X:HX0]=0;
    @[X:HX1]=1;      //This contact point outputs 1
    @[X:HX2]=0;      //Others output 0
    @[X:HX3]=0;
    @[X:HX4]=0;
    @[X:HX5]=0;
}
else if(page==3){    //In case of no.3 screen
    @[X:HX0]=0;
    @[X:HX1]=0;
    @[X:HX2]=1;      //This contact point outputs 1
    @[X:HX3]=0;      //Others output 0
    @[X:HX4]=0;
    @[X:HX5]=0;
}
else {               //In case of other screens
    @[X:HX0]=0;
    @[X:HX1]=0;
    @[X:HX2]=0;
    @[X:HX3]=1;
    @[X:HX4]=1;
    @[X:HX5]=1;
}
```

Arrange global script settings as below from 'Project Property ➔ Global Script Settings'.
It is a way to process scripts during periodic check-ups when device values for the screen change were changed.
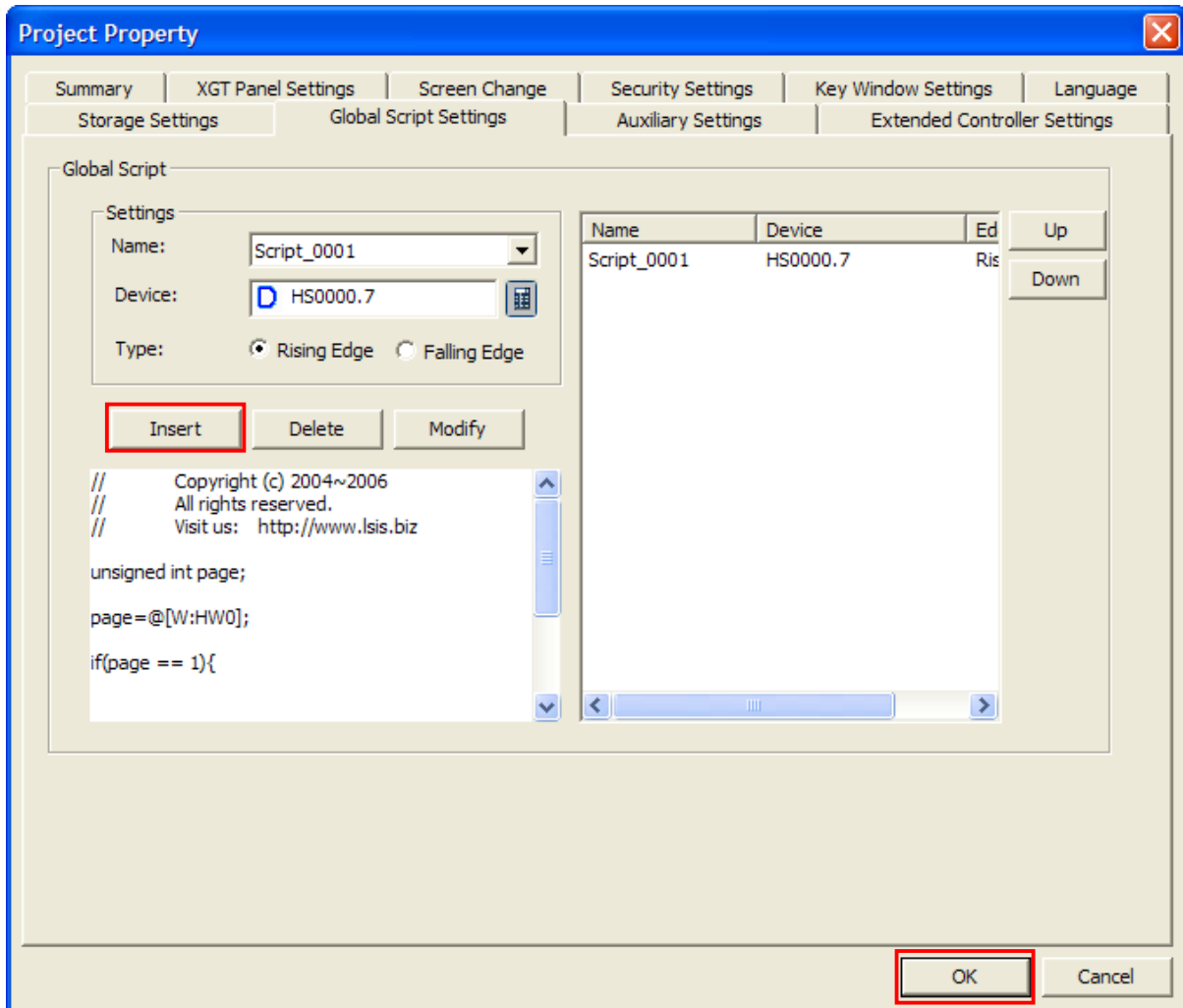

After selecting the written script under its setting, choose a bit device which is On/Off periodically.
Above arranged HS0.7 is On/Off every second and an internal flag in XGT Panel.

Auto screen change through script

1. Summary

The script function can be convenient when screen change takes place according to set time. We previously explained 'screen change function through device' within its chapter; this function can be extended and utilized using a script.
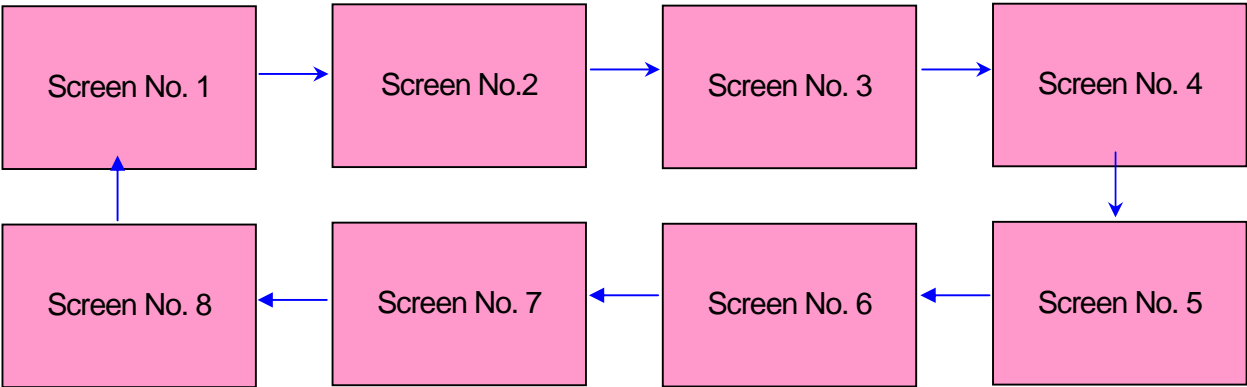
For your understanding, execute the sample data called 'auto screen change through script. xpd' from XP-Builder.

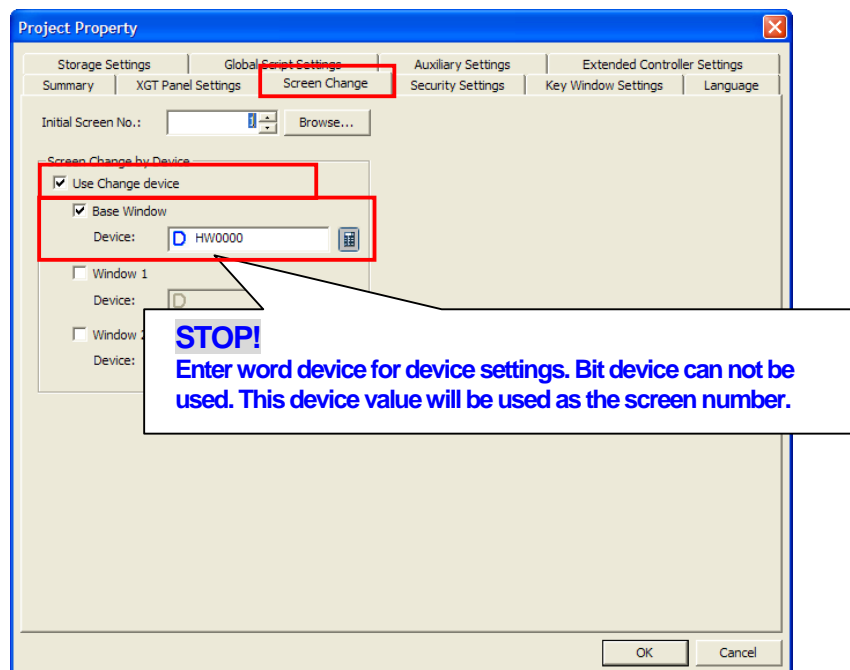## 2. Making screen data

（1） Select 'Project Property Setting' from menu.
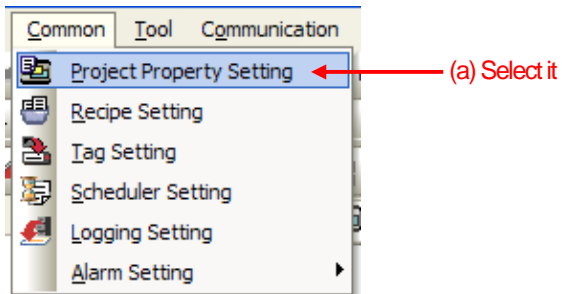
(a) Select it

（2） Select 'Screen Change' from 'Project Property'

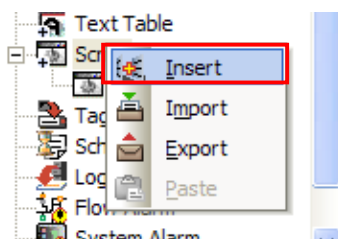(a) Click 'Screen Change'.

(b) Check for screen change by device

(c) After selecting 'Base Window', enter device.

STOP!
Enter word device for device settings. Bit device can not be used. This device value will be used as the screen number.

（3） Make several screens.
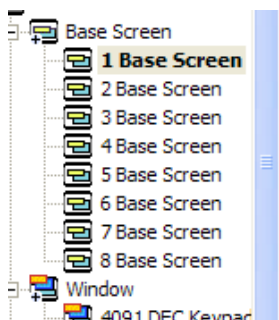
(4) Create a script

(5) Write on created scripts as below.

```
 1   //  Copyright (c) 2004~2006
 2   //  All rights reserved.
 3   //  Visit us:   http://www.lsis.biz
 4
 5   unsigned int i;       //Declares unsigned int type variable
 6   i=@[W:HW0];           //Assignes HW0000 to variable
 7   if(i>=8){             //In case variable is larger than or same with 8
 8       i=1;              //Assignes 1 to variable
 9   }
10   else{                 //In case variable is smaller than 8
11       i+=1;             //Increased by 1
12   }
13   @[W:HW0]=i;           //Assignes variable to HW0000
14   Buzzer();             //Buzzer On
15
16   ERROR:
17   {
18
19   }
20
```

(6) Register the created script from step (5) under 'Global Script Settings' in 'Project Property'.
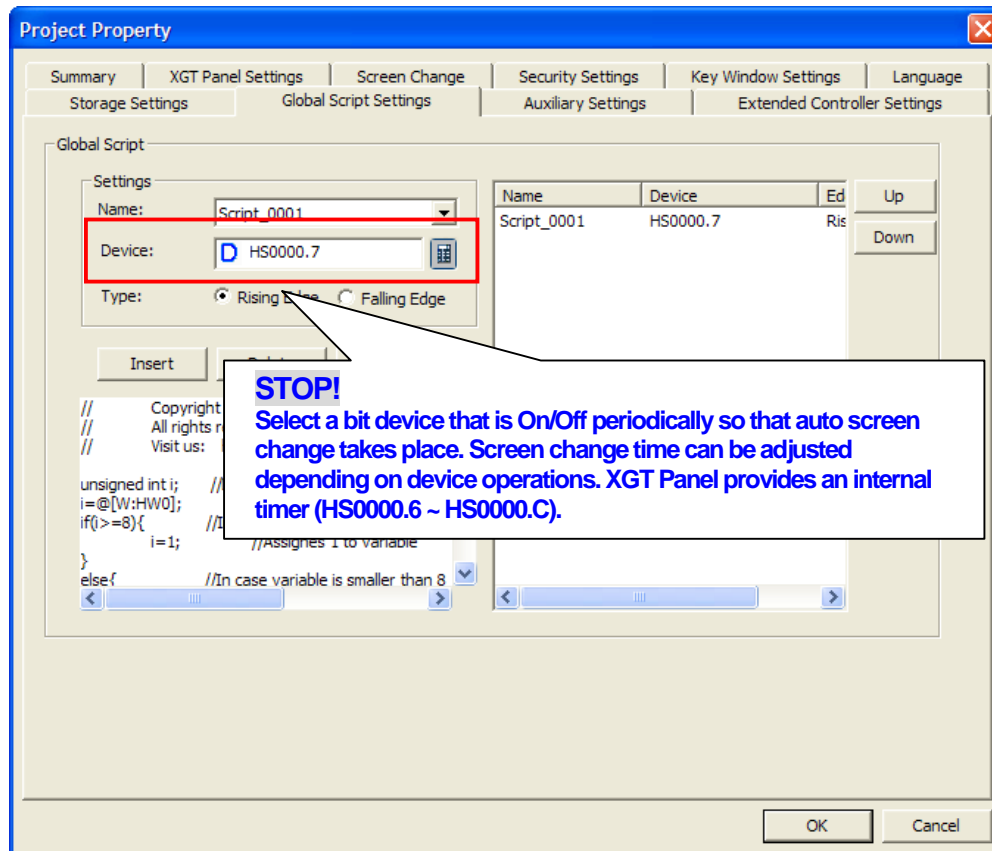
Device Address	Settings
HS0000.6	500msec On-Off Timer
HS0000.7	1 Sec. On-Off Timer
HS0000.8	2 Sec. On-Off Timer
HS0000.9	5 Sec. On-Off Timer
HS0000.A	10 Sec. On-Off Timer
HS0000.B	30 Sec. On-Off Timer
HS0000.C	60 Sec. On-Off Timer

3. Verify through simulations

Select this icon from this XP-Builder's toolbar .
If there were errors in data screen, the following message will be displayed
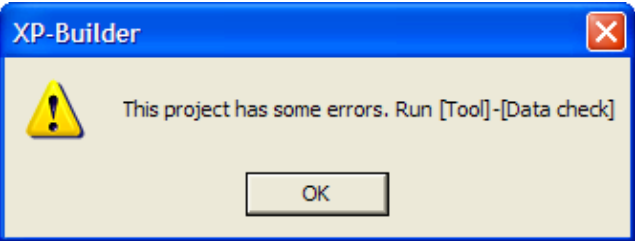
In case of no error, the simulator will be operated.

Automatically screen change takes place every second from screen no.1 to screen no.8.

Window reference function

1. Summary

XP-Builder has a window reference function. This feature is to refer to the window on the base screen with shared and overlapped parts that are made in advance. This overcomes a drawback on user memory expansion when common and repeated parts were drawn individually, which force to make large numbers of base screens. Without this feature, writing a program would become more time-consuming task. And to make partial modifications on screens, just make changes on window. Thus it minimizes your writing task and time.
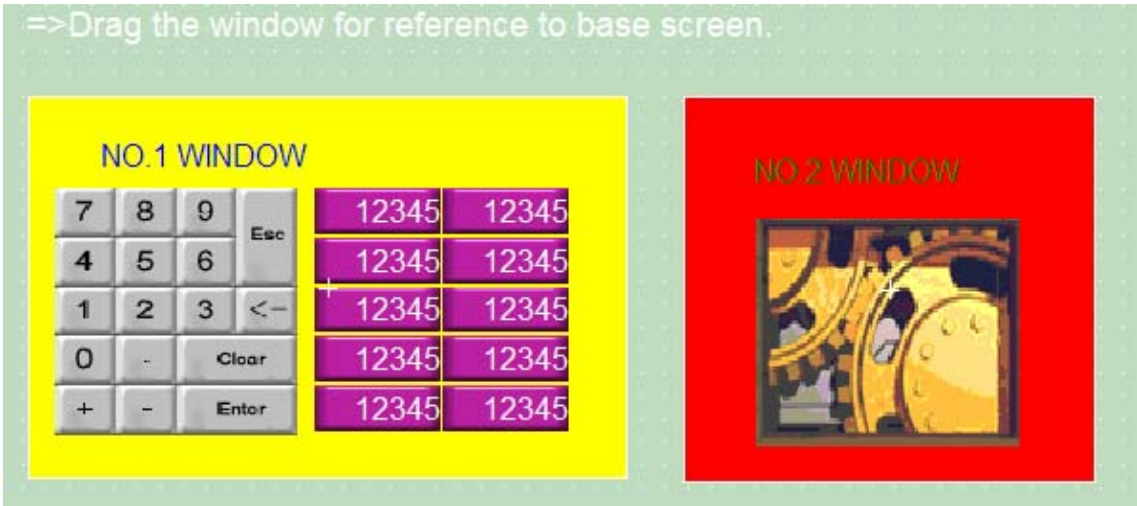
For your understanding, execute the sample data called 'window reference function. xpd' from XP-Builder.

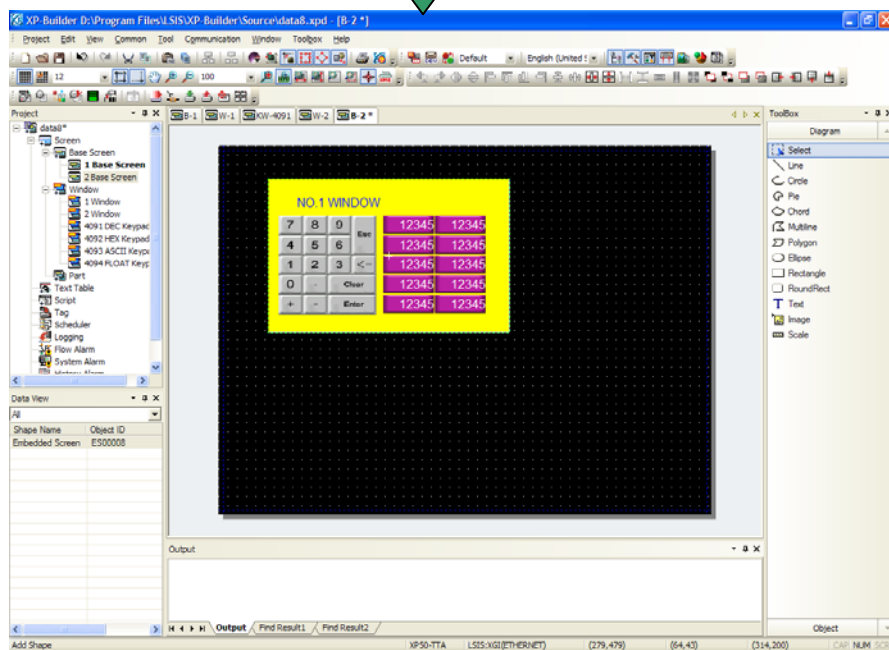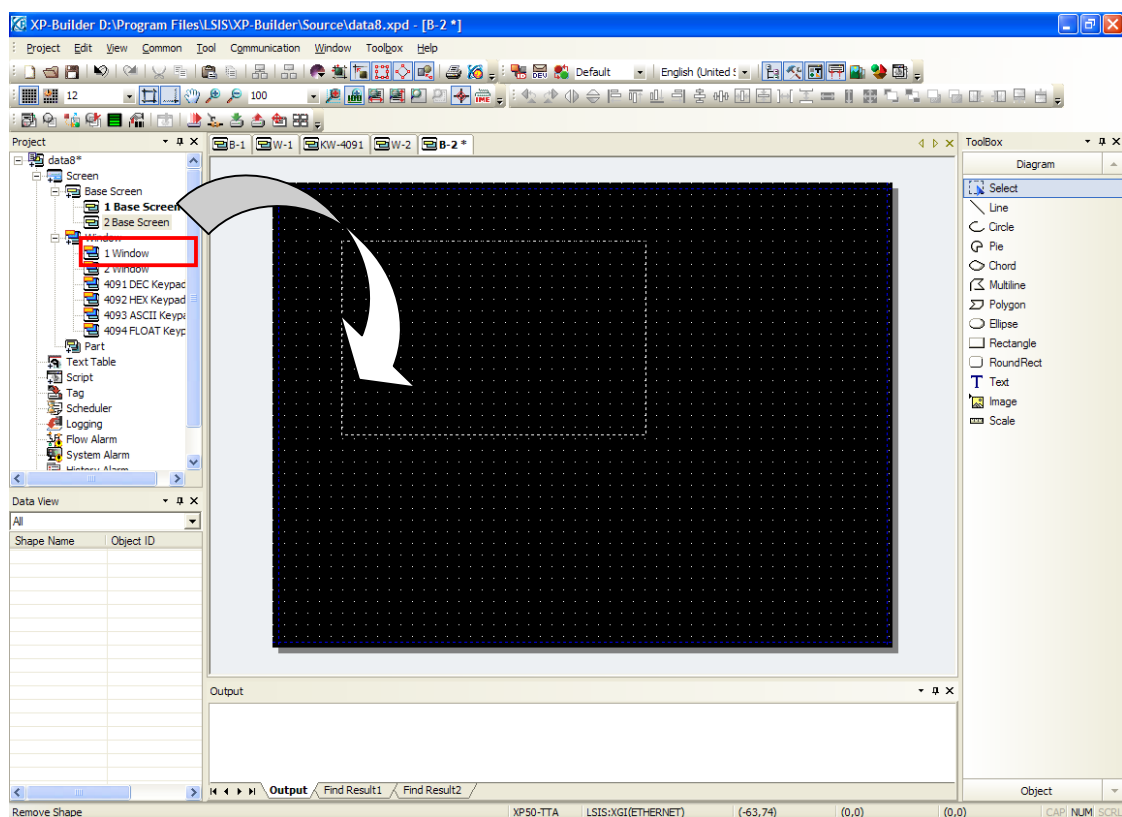## 2. Making screen data

（1） Create a window.

(a) Click 'Insert'.
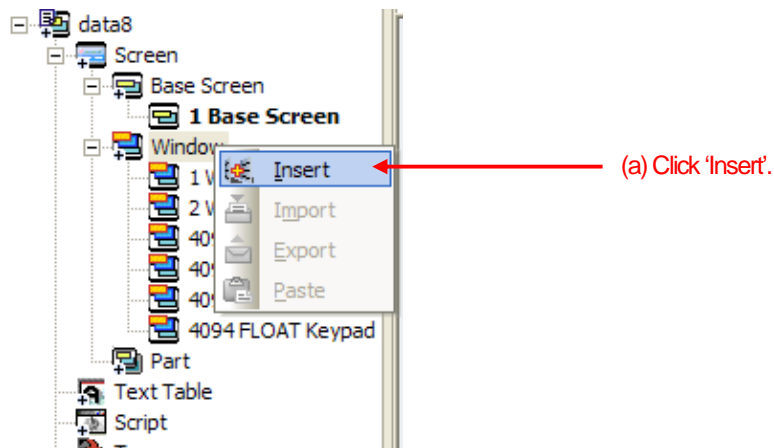
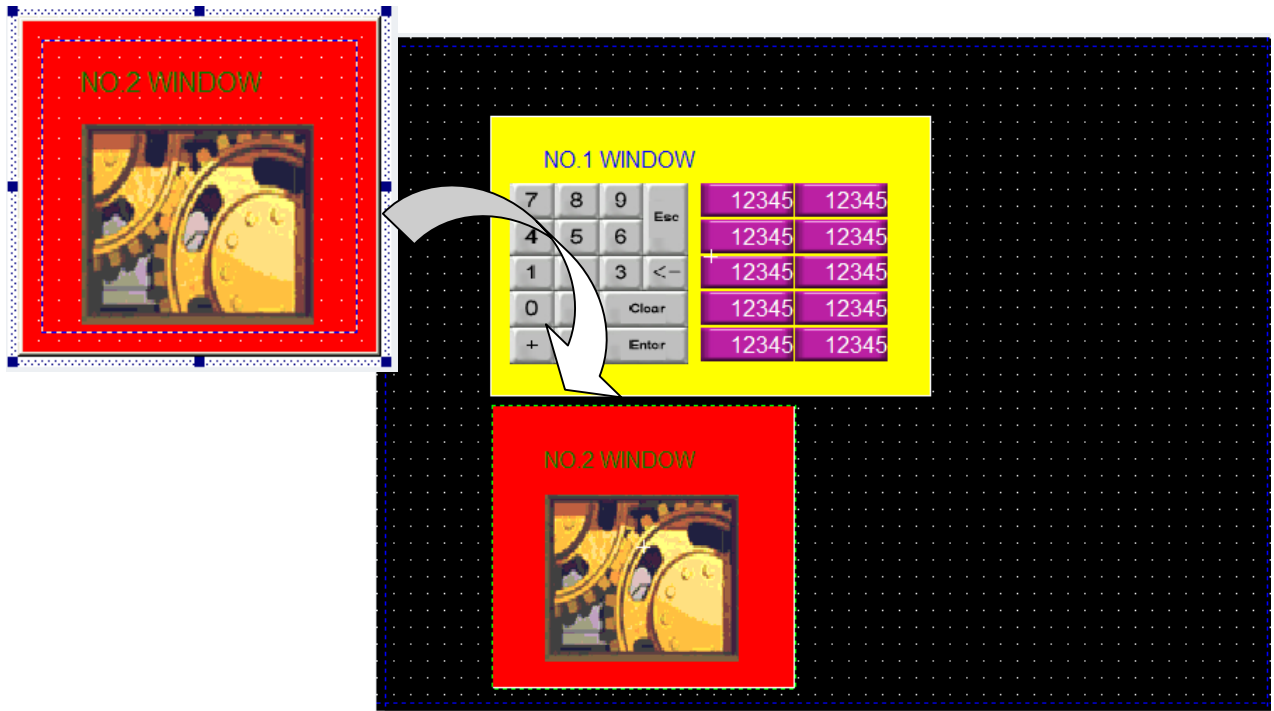（2） Make a window using objects and diagrams.

STOP!
The size of window can be adjusted. You will be able to change the size by selecting this area which is indicated by a mouse and through dragging.

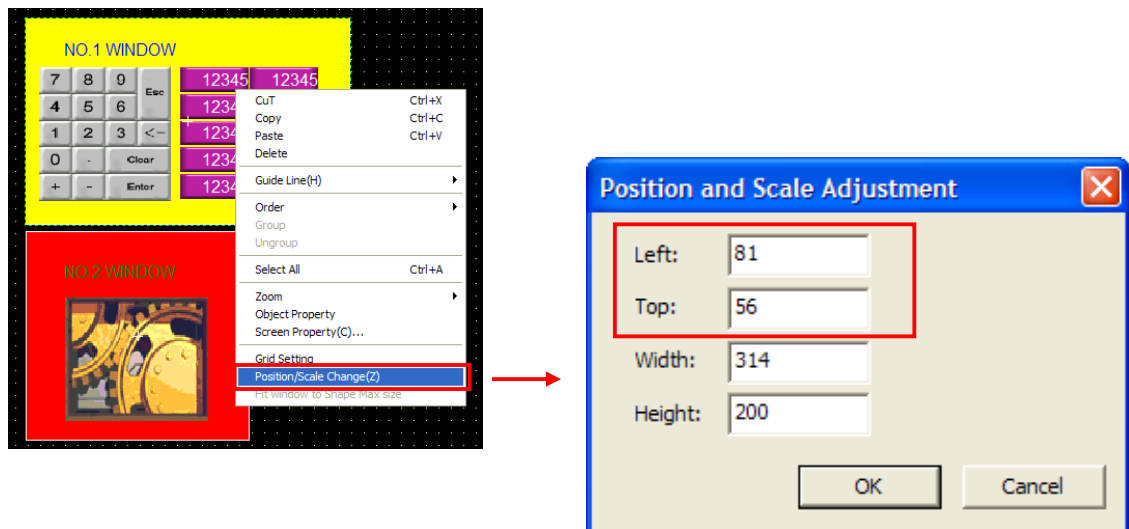（3）Drag the created window onto the base screen with a mouse.

（4） Other windows can be dragged and used following the same procedures.

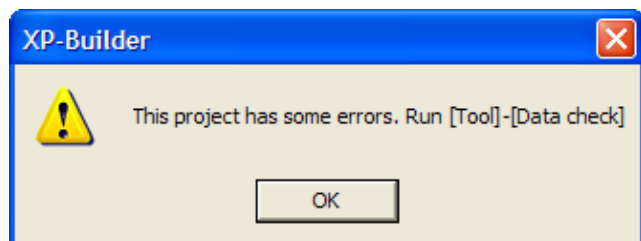（5） Place the reference window on the preferred location. You can locate it directly using a mouse like objects, or use position and scale adjustment tool.

3. **Verify through simulations**

Select this icon [icon] from this XP-Builder's toolbar [toolbar icons].
If there were errors in data screen, the following message will be displayed

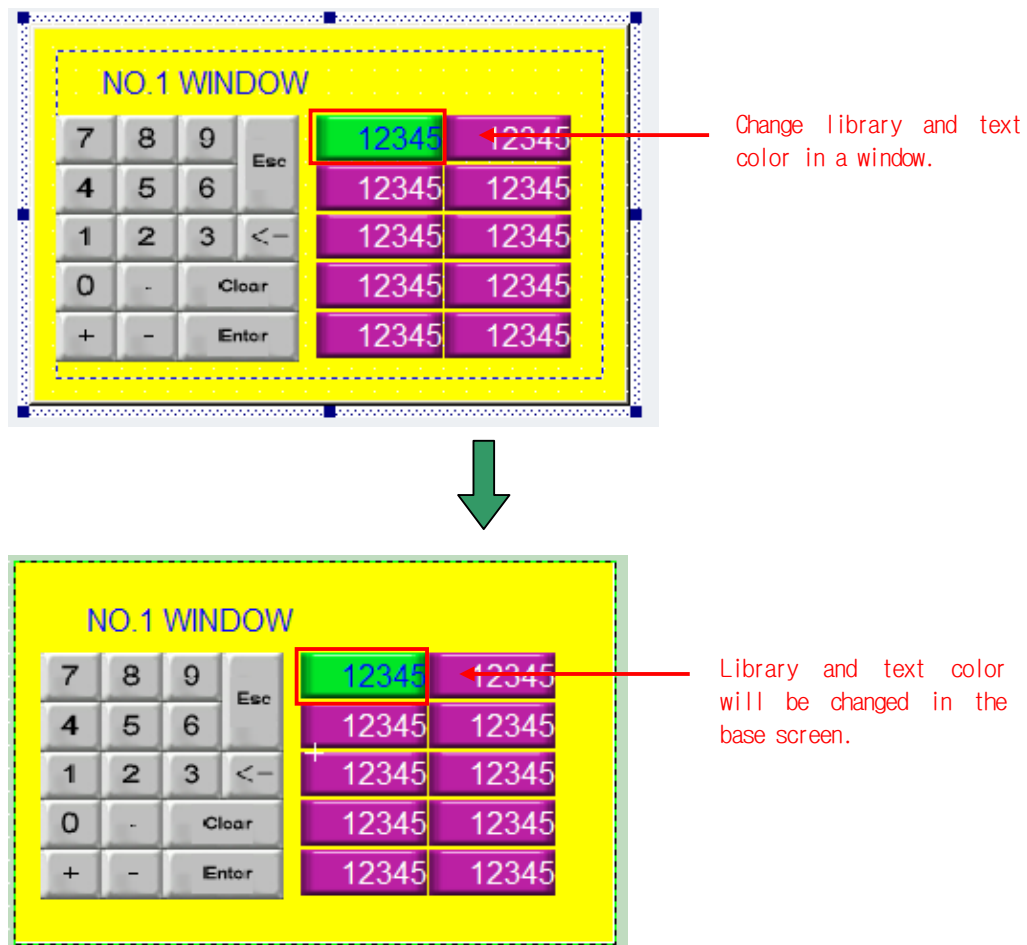In case of no error, the simulator will be operated.

Enter values through the decimal keypad using no.1 window reference.
Animation function is operated using no. 2 window reference.

4. **User tips!**

☞ Modifications on window reference.

In case modifications on window reference are required after using them on base screens, change data in window will automatically adjust data in base screens.

For instance, if you make a change on no.1 window, below base screen will be affected.
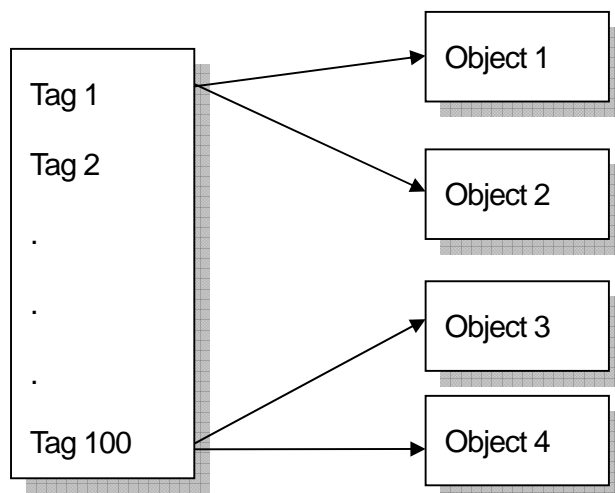

Change library and text color in a window.

Library and text color will be changed in the base screen.

And you can't make modifications on base screens. Make modifications in a window.

# Device setting through tag function

1. **Summary**

XP-Builder offers some of tag functions. Once the tag has been registered, it is easy to register a device (bit/word) from the object. And when you need to change a device, just change an address in the tag. Then it will make a change all together on objects where the tag was applied. Moreover it supports 'Import' function where tags can be made in Excel and import to XP-Builder for use. It is recommended to use a tag function if there are many objects.

```
┌─────────────┐                    ┌─────────────┐
│  Tag 1      │──────────────────▶ │  Object 1   │
│             │        ╲           └─────────────┘
│  Tag 2      │         ╲
│             │          ╲         ┌─────────────┐
│    .        │           ╲──────▶ │  Object 2   │
│             │                    └─────────────┘
│    .        │
│             │                    ┌─────────────┐
│    .        │            ╱─────▶ │  Object 3   │
│             │           ╱        └─────────────┘
│  Tag 100    │──────────╱───────▶ ┌─────────────┐
└─────────────┘                    │  Object 4   │
                                   └─────────────┘
```

For your understanding, execute the sample data called 'device setting through tag function. xpd' from XP-Builder.

2. Making screen data

（1） Register a tag.
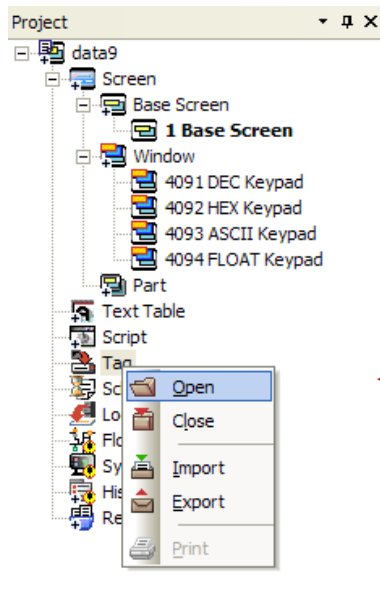
(a) Either select 'Open' or double-click your mouse.

No	Name	Device Type	Address	Description
1				
2				
3				Enter descriptions If detailed explanation is needed about the tag. (Not required)
4				
5				

Create a tag name.
Ex) Electric Supply Switch

Choose a device type
(bit or word)

Enter device address.

Bit Device

Device Settings
Controller:
0: LSIS:XGI(ETHERNET)
MX
MX0000

7	8	9	Clr	Back
4	5	6	A	B	C
1	2	3	D	E	F
0	.	Enter

XGI PLC M Memory
Bit: %MX0123 Or %M0123 (0~131071)

Network
◉ Use Default   ○ Custom Setting
Network ID: 255   Station: 255

OK   Cancel

No	Name	Device Type	Address	Description
1	TEST_BIT_TAG_1	BIT	HX00000	TEST_BIT_TAG_1ST
2	TEST_BIT_TA	BIT	HX00001	TEST_BIT_TAG_2ST
3	TEST_BIT_TAG	BIT	HX00002	TEST_BIT_TAG_3ST
4				BIT_TAG_4ST
5				BIT_TAG_5ST
6				BIT_TAG_6ST
7				BIT_TAG_7ST
8				BIT_TAG_8ST
9	TEST_BIT_TAG_9	BIT	HX00008	TEST_BIT_TAG_9ST
10	TEST_BIT_TAG_10	BIT	HX00009	TEST_BIT_TAG_10ST
11	TEST_BIT_TAG_11	BIT	HX0000A	TEST_BIT_TAG_11ST
12	TEST_BIT_TAG_12	BIT	HX0000B	TEST_BIT_TAG_12ST
13	TEST_BIT_TAG_13	BIT	HX0000C	TEST_BIT_TAG_13ST
14	TEST_BIT_TAG_14	BIT	HX0000D	TEST_BIT_TAG_14ST
15	TEST_BIT_TAG_15	BIT	HX0000E	TEST_BIT_TAG_15ST
16	TEST_BIT_TAG_16	BIT	HX0000F	TEST_BIT_TAG_16ST
17	TEST_BIT_TAG_17	BIT	HX00010	TEST_BIT_TAG_17ST
18	TEST_BIT_TAG_18	BIT	HX00011	TEST_BIT_TAG_18ST
19	TEST_BIT_TAG_19	BIT	HX00012	TEST_BIT_TAG_19ST
20	TEST_BIT_TAG_20	BIT	HX00013	TEST_BIT_TAG_20ST
21	TEST_WORD_TAG_1	WORD	HW0000	TEST_WORD_TAG_1ST
22	TEST_WORD_TAG_2	WORD	HW0001	TEST_WORD_TAG_2ST
23	TEST_WORD_TAG_3	WORD	HW0002	TEST_WORD_TAG_3ST

STOP!
Tag modification is similar to Excel. Cell can be copied after the selection by a mouse or modifications done in Excel can be copied and pasted into tag modification area.

(2) Offers import/export functions. It is also printed in Excel *.CSV form. This file can be used to modify tags or with other XP-Builder projects.
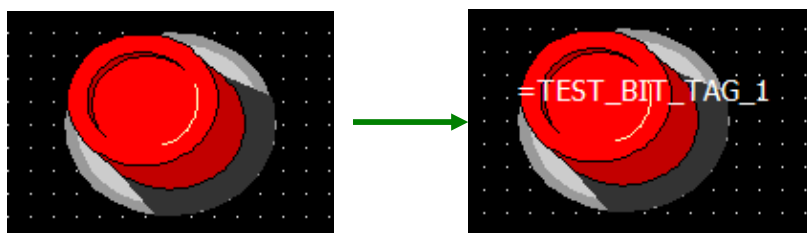

Excel file (*.CSV)
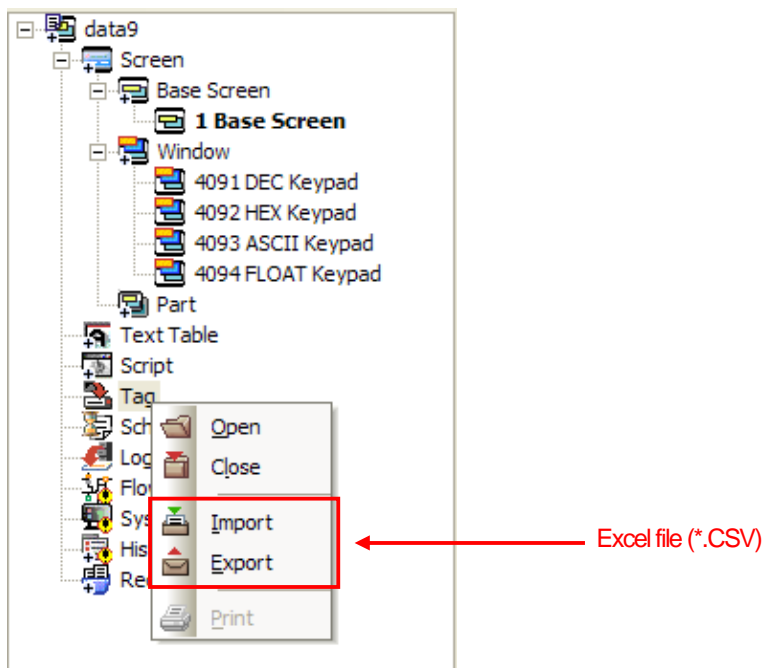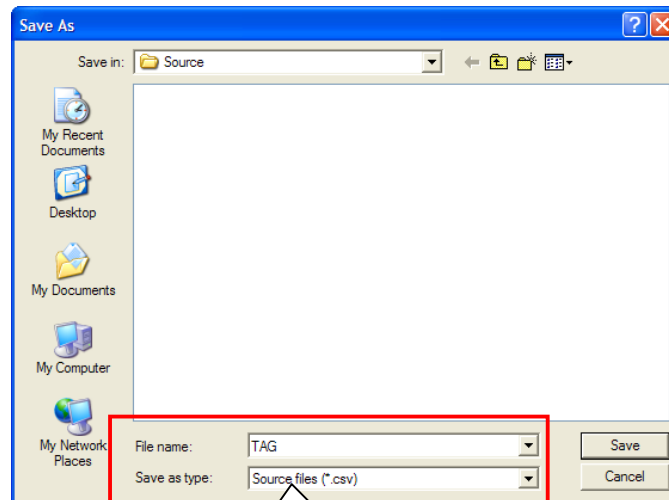
STOP!
CSV file is Excel type.

(3) Once tag registration is finished, apply them to objects.

STOP!
For objects using a bit, only bit tags will be displayed.
For objects using a word, only word tag will be displayed.
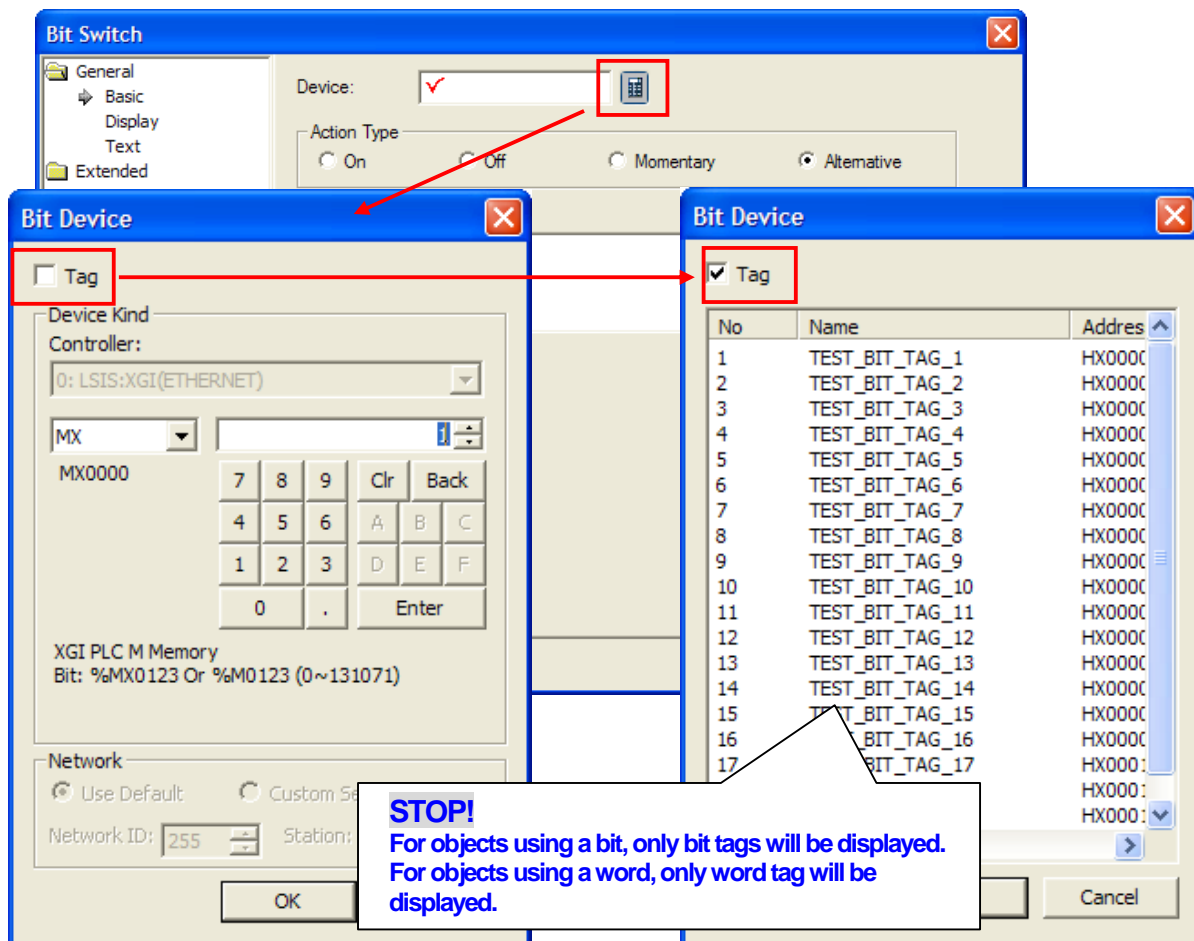
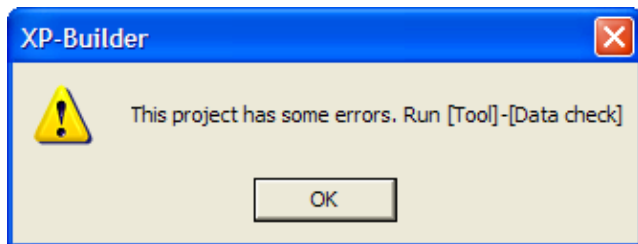（4） When tag was selected from object, below screen will be displayed.
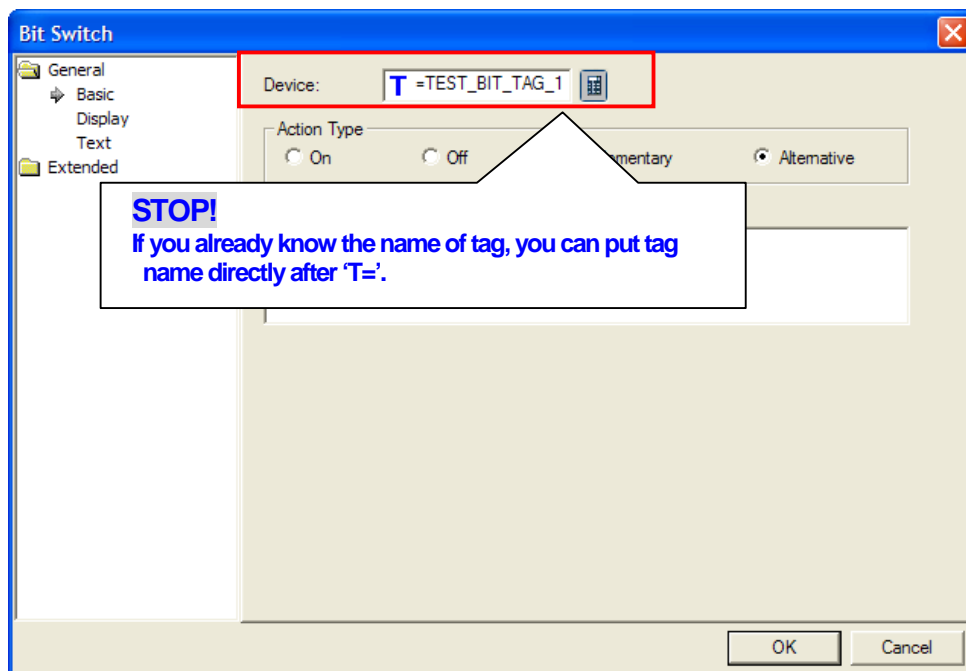
（5） Selecting this icon ⊡ from the list ⊡⊡⊡ will display tag names on objects.

3. Verify through simulations

Select this icon ![icon] from this XP-Builder's toolbar ![toolbar].
If there were errors in data screen, the following message will be displayed

In case of no error, the simulator will be operated.

By using the same tag on bit switches and lamps, when a bit switch is pressed, the specific bit lamp will be turned on.
Additionally numeric input values will increase when word switch is pressed.

4. **User tip!**

☞ Setting for object ID size
Object ID size can be adjusted. The procedures are shown as below.
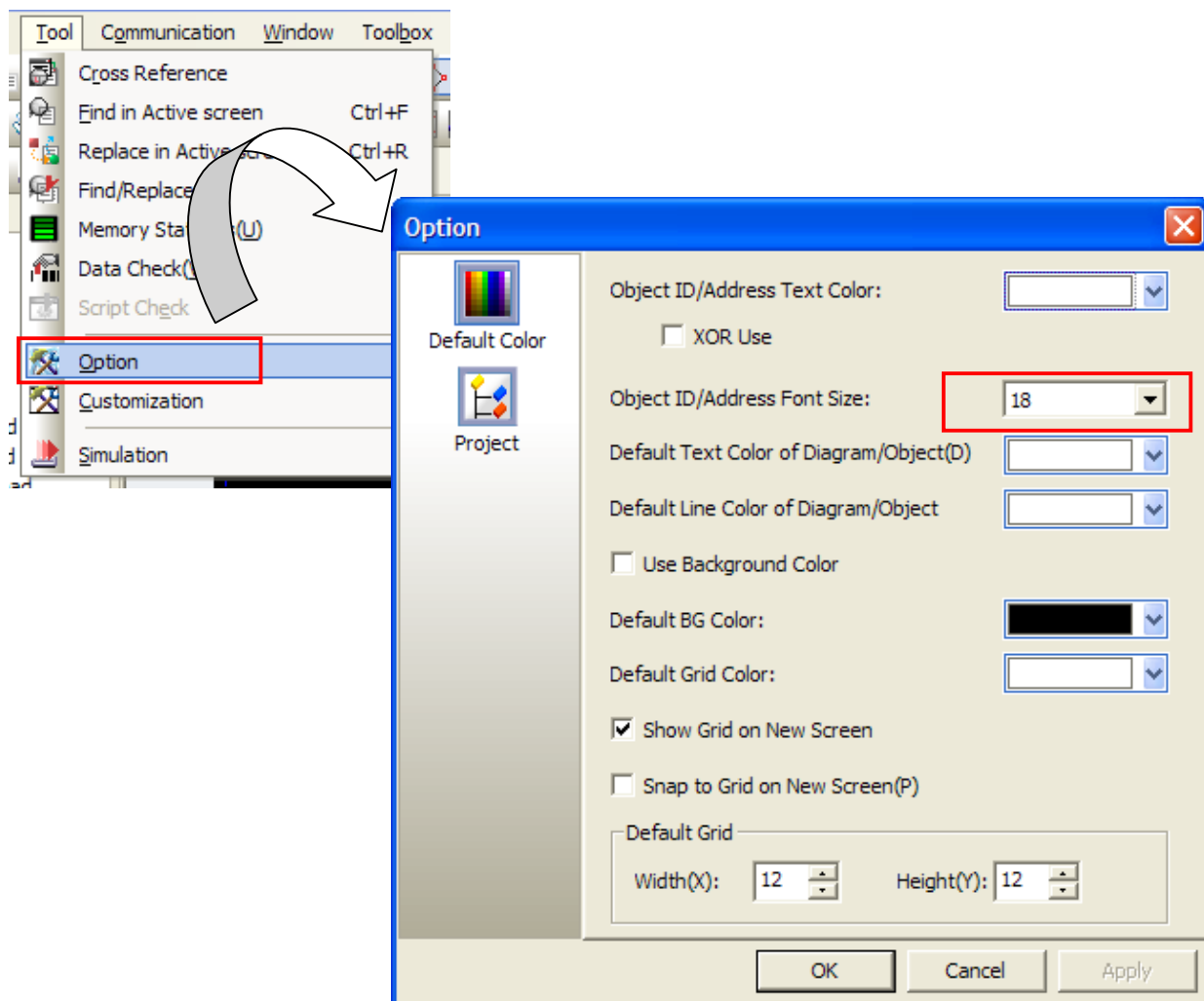
From this option window, ID text color and background color can be changed.

How to update the software of the XGT Panel device

Here describes how to update the software of the XGT Panel device.

Download the device software and XP-Builder in our homepage (http://eng.lsis.biz).
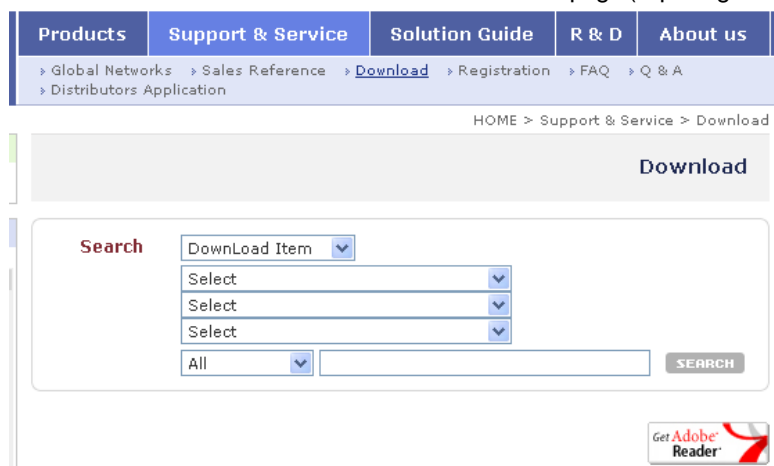
Install the XP-Builder. (Use the latest version.)
Select the setting menu at the XGT Panel to update as follows. (select 'Update HMI Engine')
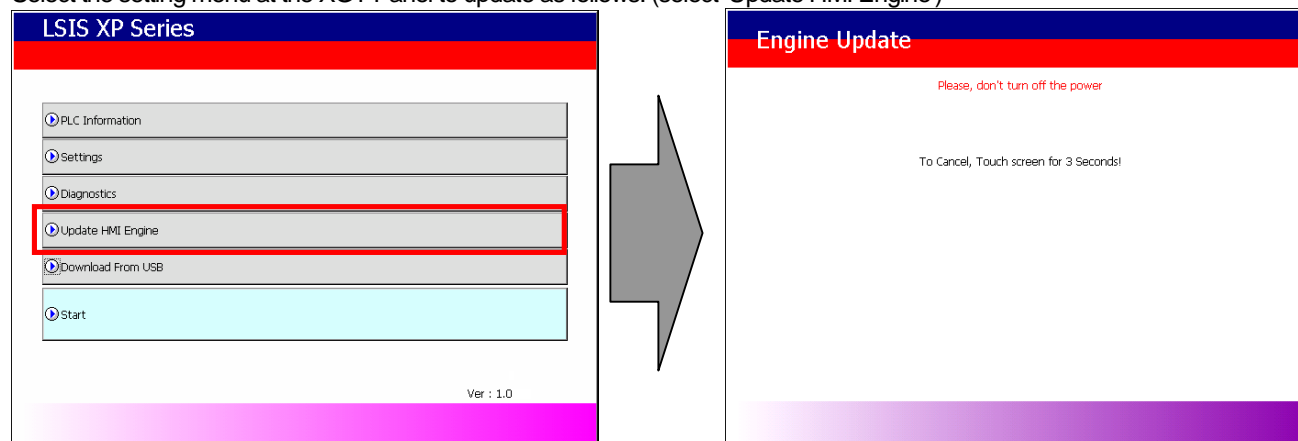
Execute the XP-Builder.
Select [Communication]-[XGT Panel Update].

Select the communication media to update.

When using the RS-232C cable (PMC-310S)
: Connect it with XGT Panel TOOL port
  (Round 9 pin)

When using the Ethernet cable
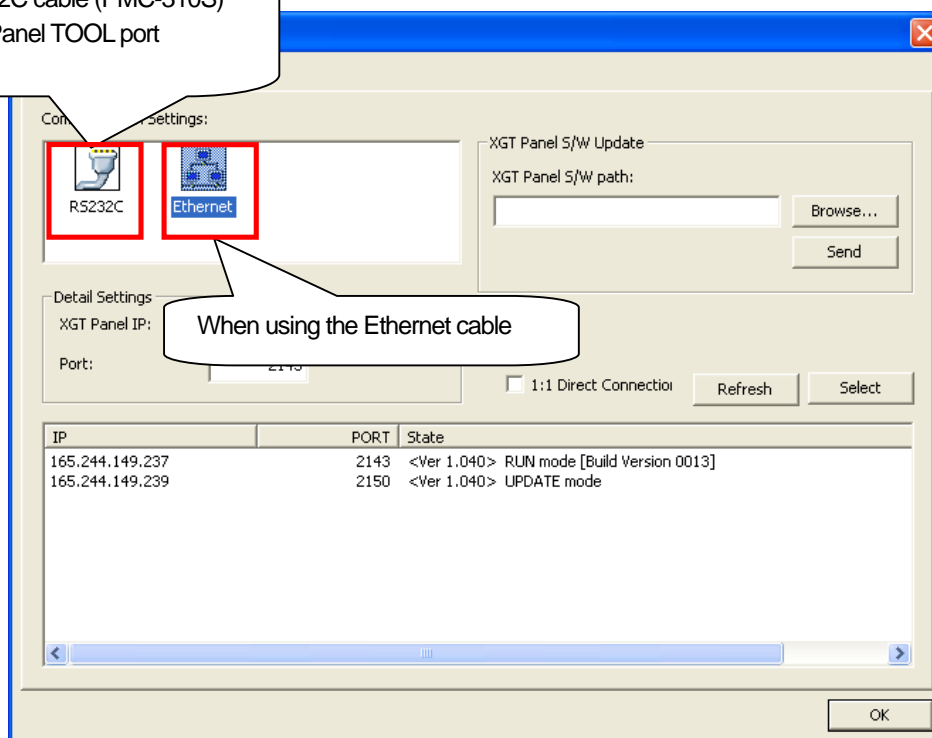
Install the XGT Panel device software downloaded from homepage into PC. After installation, the temporary folder is made as follows.
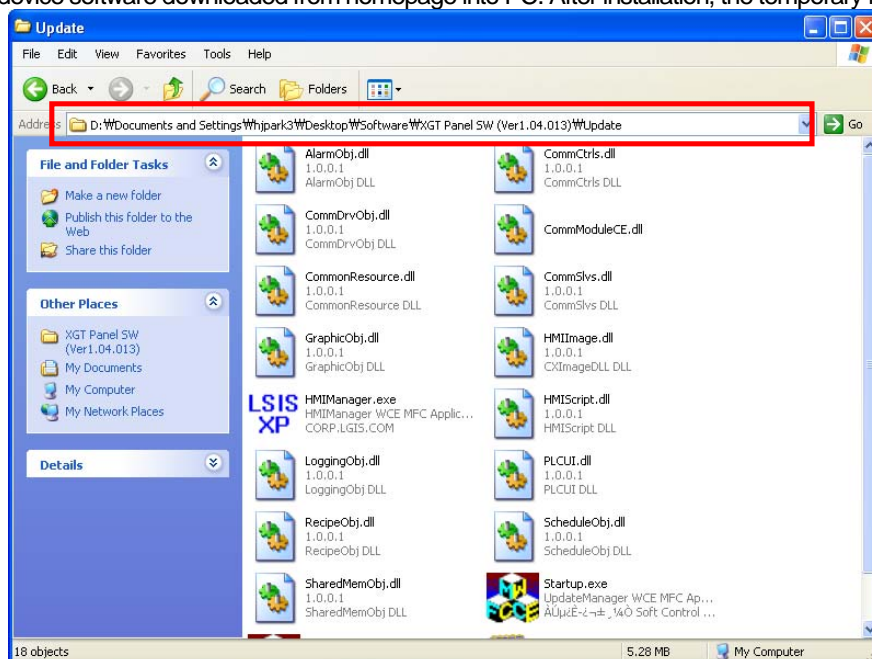
Select the XGT Panel S/W path in the XP-Builder. (Click the 'Browse'.)
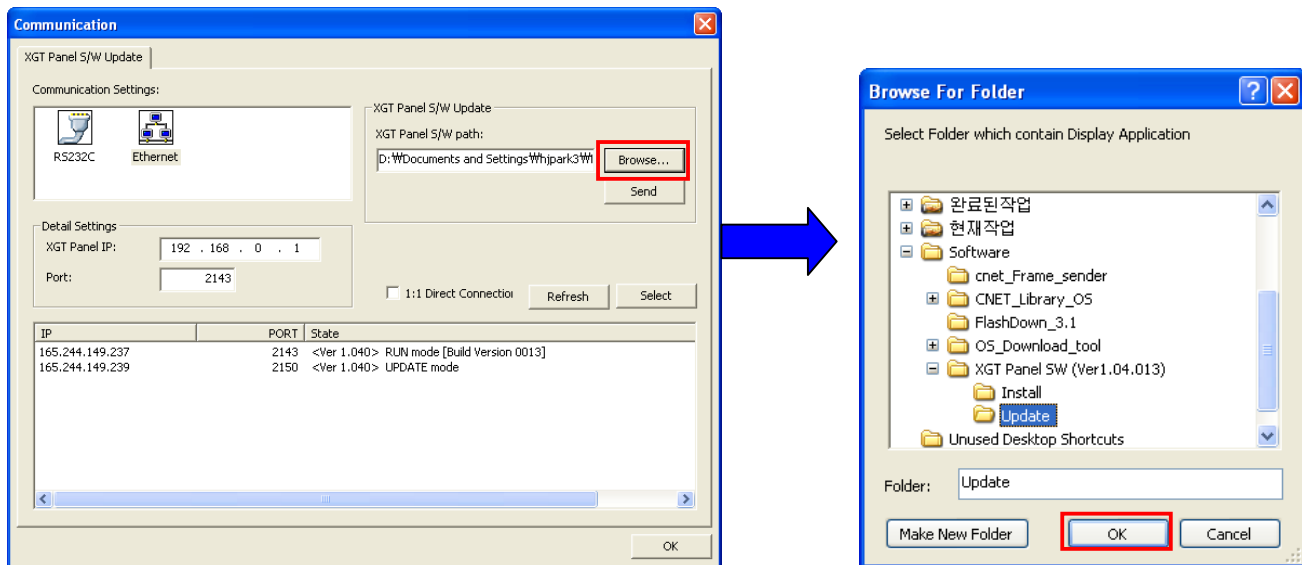
After selecting the path, click the 'OK'.

In case of using the Ethernet, follow the steps below.
(In case of RS-232C, refer to step 10.)

Connect the Ethernet cable between PC and XGT Panel.
If LAN is established, connect the Ethernet cable with XGT Panel. (Cross cable is not available.)
If PC is connected with XGT Panel directly, use the cross cable.
Select the XGT Panel to update.
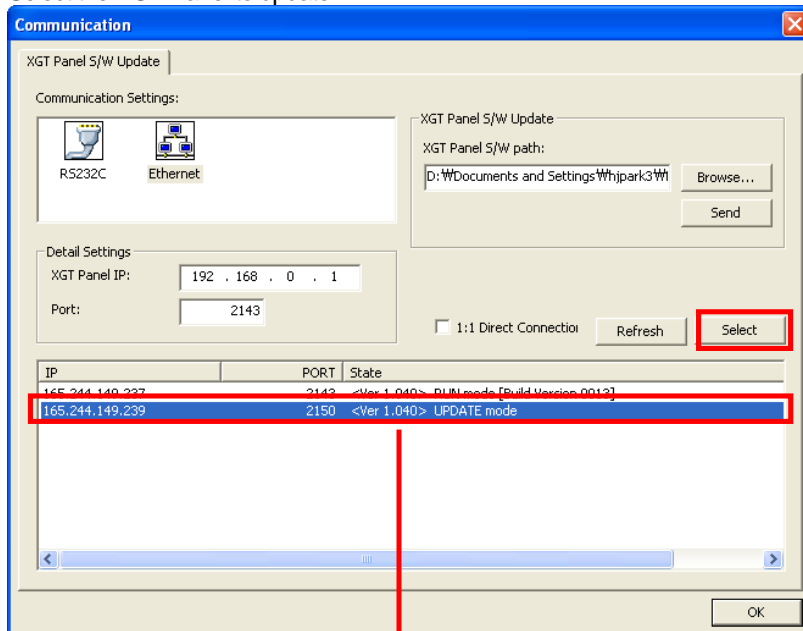
Press 'Select'

Port number is 2150
Update is available when it is UPDATE mode.

**If the user clicks 'Select', this part changes.
Check if this is XGT Panel to update.**

When using the LAN, don't check this.

**When XGT Panel is connected with PC directly, check this.
If the user doesn't check this, communication is not possible.
(Communication error message shows.)**

If 'UPDATE Mode' is not indicated, it is because step 3 is not done or cable connection is not proper.
Press 'Refresh'.
When the XGT Panel is not indicated
➔ Check the cable.
➔Sometimes PC network is not set. Set as follows.
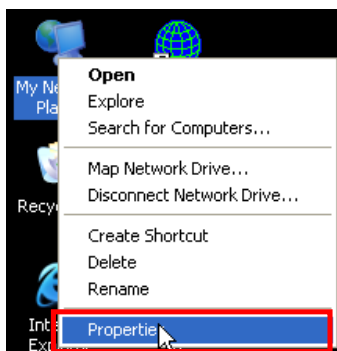
Click 'Properties'.
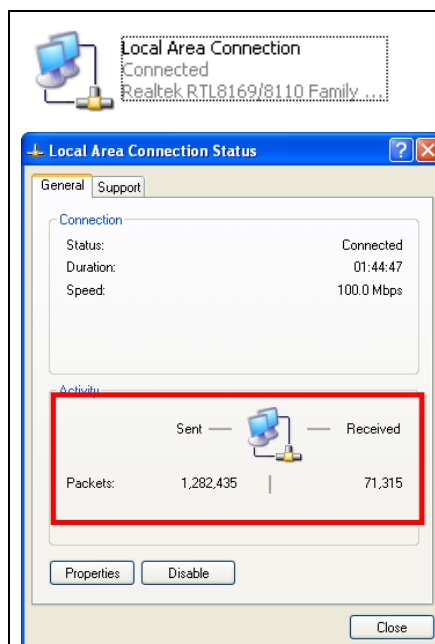
Click this icon to check the communication status

If the number of 'Sent' and 'Received' is increasing, communication status is normal.
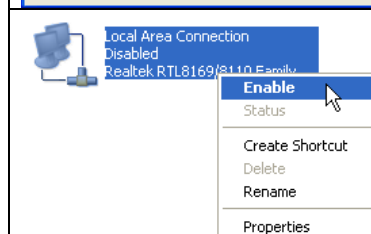
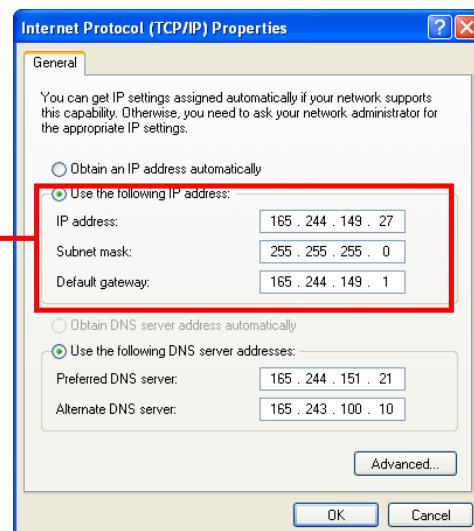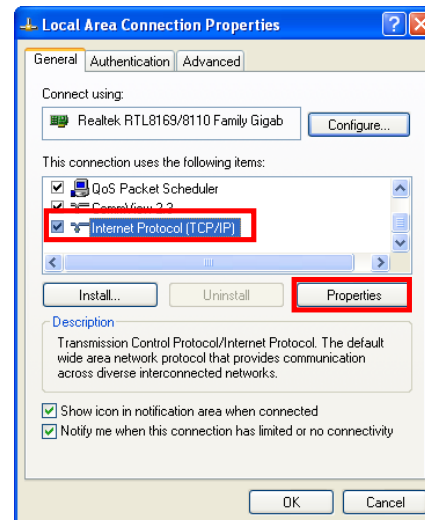**If local area connection is disabled, enable the local area connection.**

➔ In case that network is not set, follow the steps below.

Select 'Internet Protocol (TCP/IP) and click 'Properties''
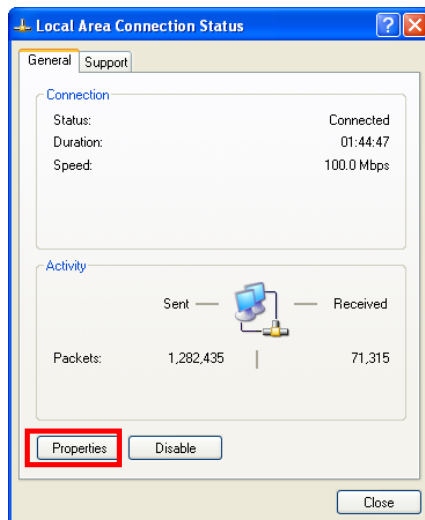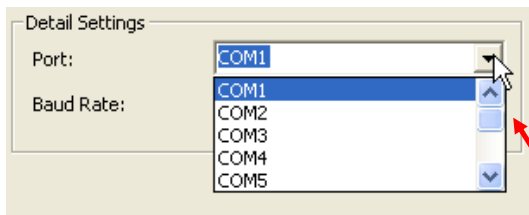
Click 'Properties'.
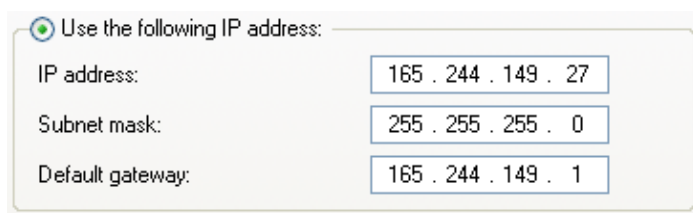
In case Default gateway is different with XGT Panel's, communication may be impossible according to PC.

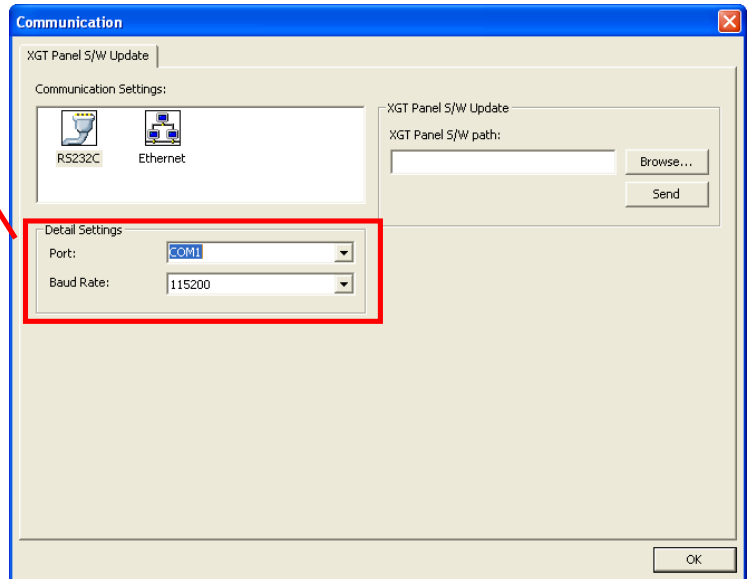When it is indicated as RUN MODE ➔   redo step 3

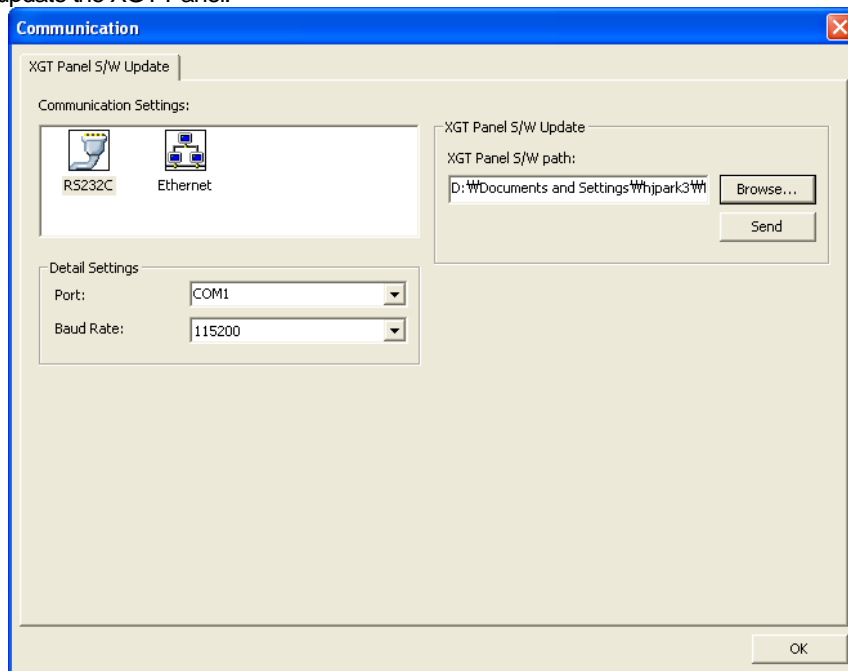When using the RS-232C, designate the COM port number of the PC.

*RS-232C is also available but it is much slower than Ethernet so we recommend Ethernet.
*When using the USB-Serial converter, transmission can stop with transmission not completed. It is because the USB-Serial converter may have problem.
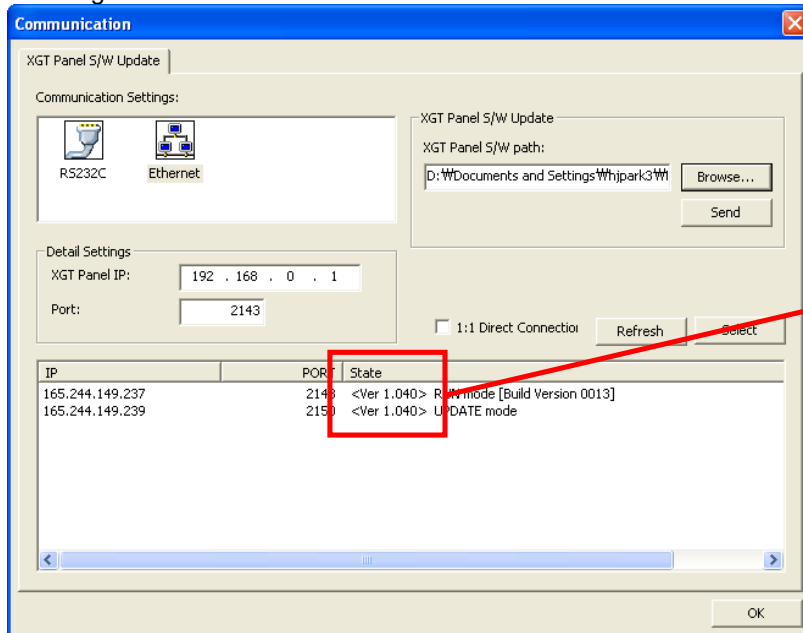
Click 'Send' to update the XGT Panel.

Notice: Don't turn the XGT Panel off during the transmission. It may cause sever problem.

After updating, check the result.
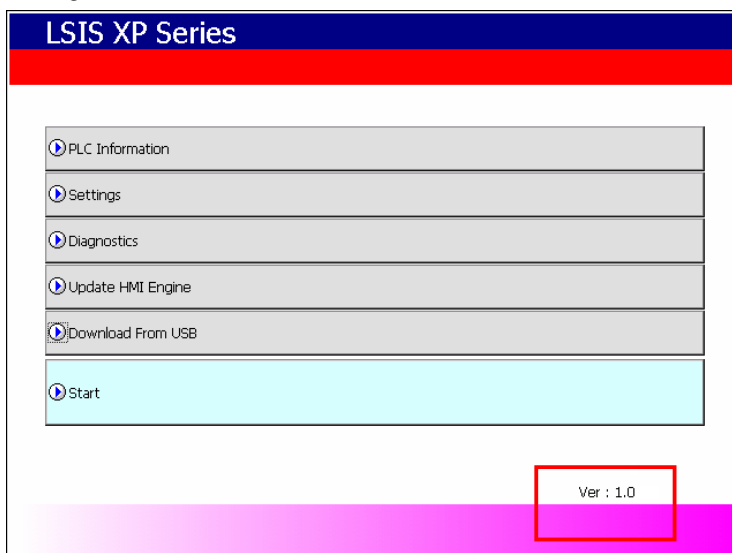
Checking on the XP-Builder

Checking on the XG Panel device

Way to update window CE in XGT Panel

We would like to explain how to update Window CE 5.0 which is installed in XGT Panel.

1. Install window CE image in the CF card.
    Depending on XGT Panel types, window CE image may be different as shown below.
    Choose your XGT Panel type and copy the window CE image on the CF card.

Copy only NK.bin file to CF card
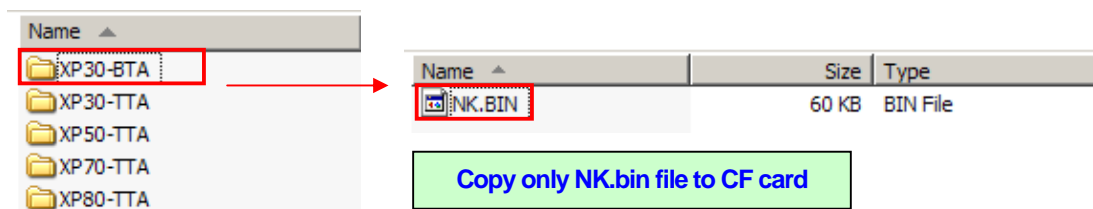
Note) Choosing a CF card
-   Choose the CF card that is larger than 16M, because the size of window CE image is about 10M.
-   Recommend to use 'SanDisk', 'Transcend'.

2. Install boot loader file in the PC as below.

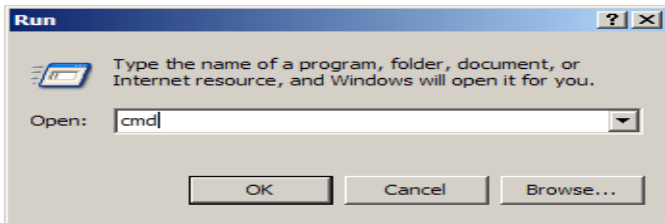3. Arrange the switches on the back of the XGT Panel as in the picture.


Put No.2 and 3 switches in B position.

4. Connect PMC-310S to both 1) TOOL port in XGT Panel and 2) COM port in PC. PMC-310S is a cable that is used for PMU or XGB loader connections
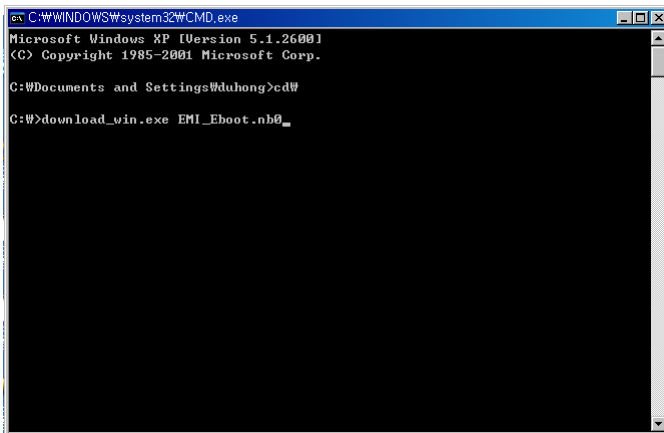
PMC-310S Cable

Connect to the TOOL port

5. Install boot loader in the XGT Panel following below instructions.

(1) From your bottom left window screen, click 'Start' and select 'Run'. 'cmd'is a command to display DOS COMMAND window
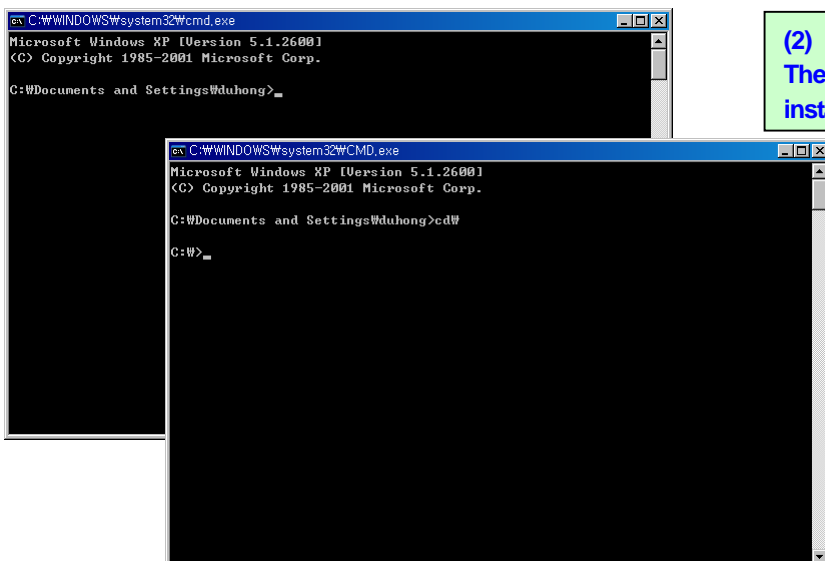
(2) DOS COMMAND window will be displayed. Then move to the folder where boot loader file was installed.

```
C:\WINDOWS\system32\CMD.exe

Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\duhong>cd\

C:\>download_win.exe EMI_Eboot.nb0_
```
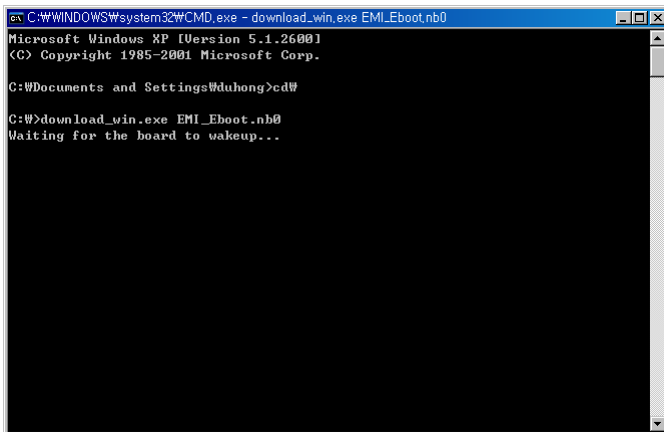
(3) Execute commands as below.
Download_win.exe EMI_Eboot.nb0
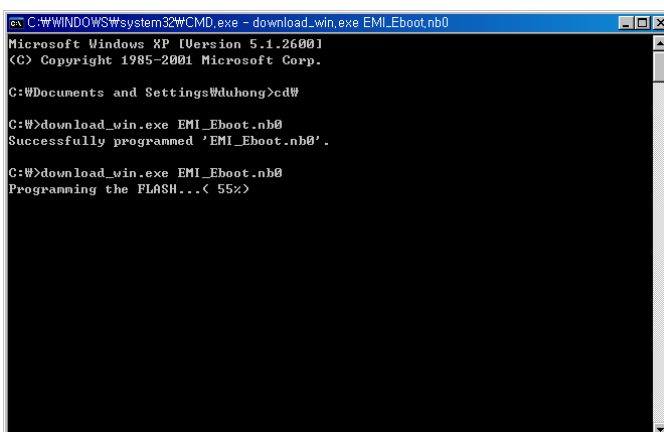**But, enter this command just when PC's COM1 is being used.**


```
C:\WINDOWS\system32\CMD.exe - download_win.exe EMI_Eboot.nb0

Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\duhong>cd\

C:\>download_win.exe EMI_Eboot.nb0
Waiting for the board to wakeup...
```

(4) If following messages appear, restart XGT Panel or press the reset button.


```
C:\WINDOWS\system32\CMD.exe - download_win.exe EMI_Eboot.nb0

Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\duhong>cd\

C:\>download_win.exe EMI_Eboot.nb0
Successfully programmed 'EMI_Eboot.nb0'.

C:\>download_win.exe EMI_Eboot.nb0
Programming the FLASH...( 55%)
```
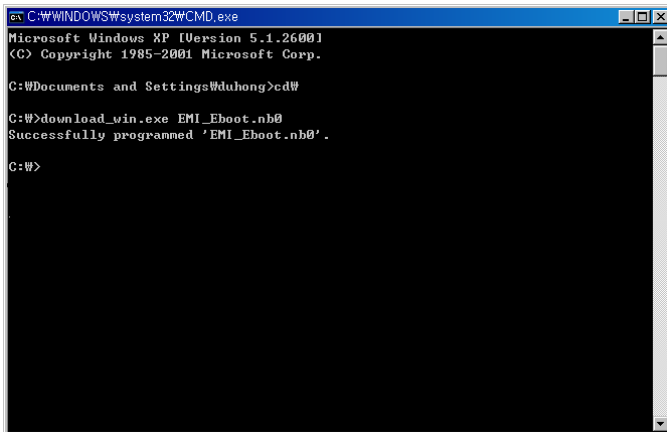
(5) If communication connection and settings were arranged properly, install boot loader in the XGT Panel as followed.
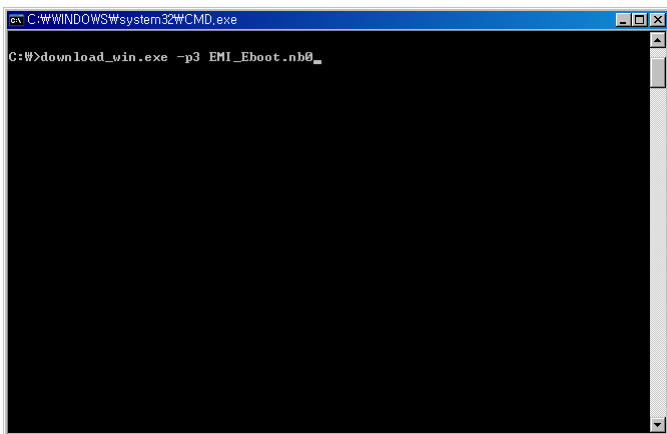
```
C:\WINDOWS\system32\CMD.exe
Microsoft Windows XP [Version 5.1.2600]
<C> Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\duhong>cd\

C:\>download_win.exe EMI_Eboot.nb0
Successfully programmed 'EMI_Eboot.nb0'.

C:\>
```

(6) If following messages were displayed, installation for boot loader is completed.


```
C:\WINDOWS\system32\CMD.exe
C:\>download_win.exe -p3 EMI_Eboot.nb0_
```

(7) If other numbers were being used on COM port, enter '–p *port number*'. For example, if you use COM3, enter–p3.

Cautions) when you use USB-RS232C Converter
- If you use USB-RS232C Converter, it takes a lot of time to install boot loader. (Very slow communication)
- It is recommended to use COM port in the PC.

6. If you finish installing boot loader, remove PMC-310S cable. And follow switch settings as below.
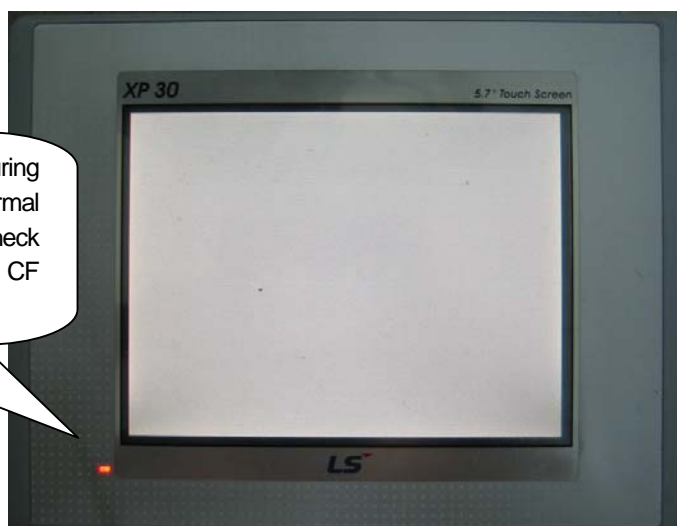

Place No.2 switch in the previous A position. And leave No.3 switch in B position.

7.   After insert the CF card in XGT Panel, restart the power or reset.
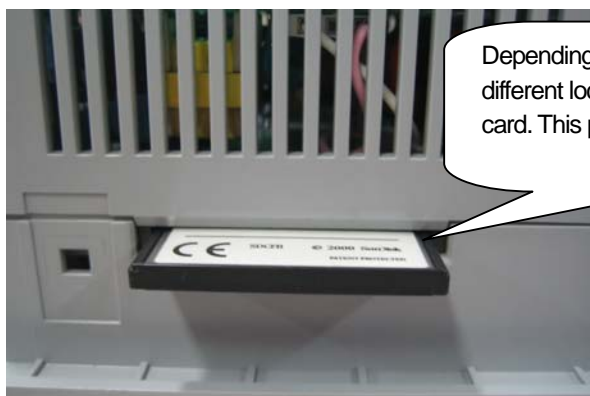
Depending on the type of XGT panels, different locations are offered to insert the CF card. This picture demonstrates for XP30.

LED will be displayed in the red color during normal installations. If LED blinks, normal installation is not taking place. Therefore check either switches or insert conditions on the CF card.
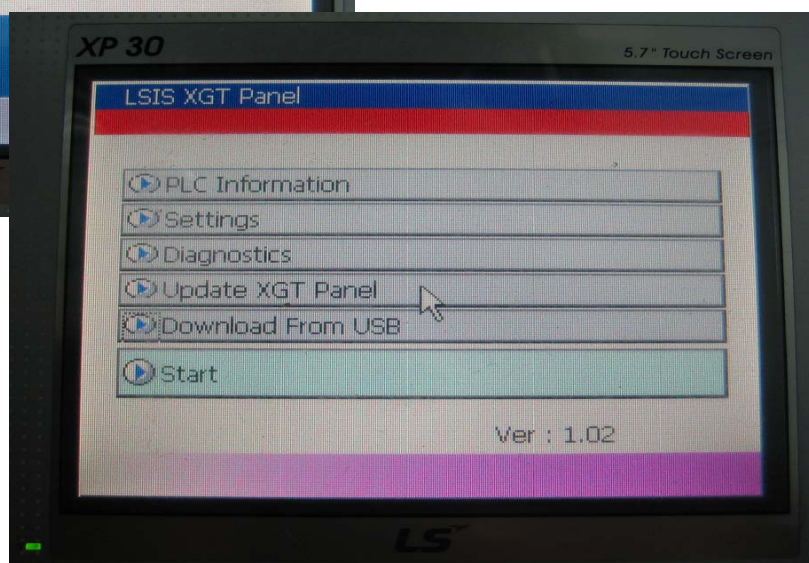
8.   After 2 minutes, the screen will be displayed.
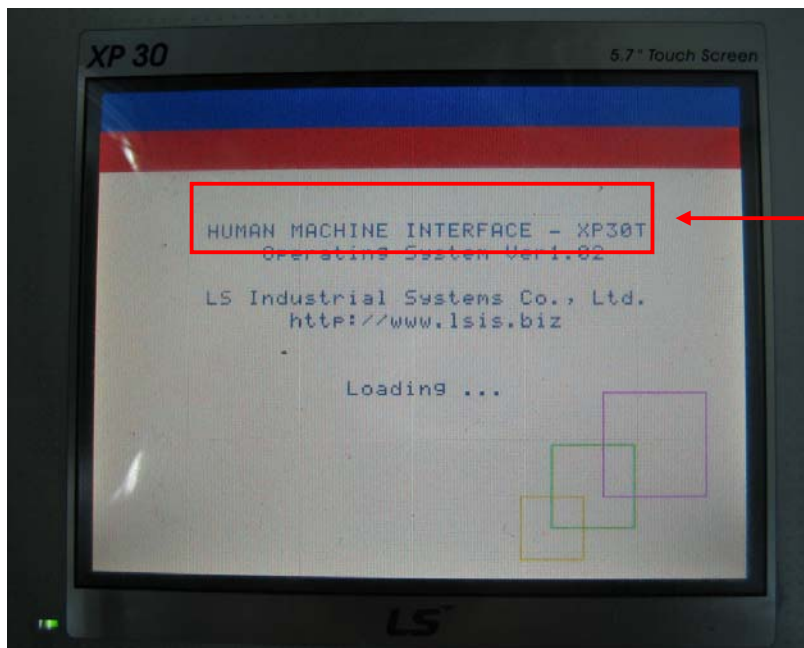
MUST check XGT panel type and version.
For XP30-TTA, display as XP30T,
For XP30-BTA, display as XP30M.

9.   If the update on window CE were successful, rearrange switches back to the original positions.

Place No.3 switch back to its original A position.

Note) Choosing a CF card reader
- – The CF card reader is required in order to read or write data.
- – Some of them are built in laptops. However we recommend to use an external reader.