OMRON

Programmable Terminal NB-series

Replace Guide
From NB to NB-V1

NB3Q-TW□□B-V1
NB5Q-TW□□B-V1
NB7W-TW□□B-V1
NB10W-TW01B-V1

Replace
Guide

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■ Introduction

This document provides information useful to replace NB Programmable Terminal with its successor model NB-V1 but does not contain safety precautions.

Please prepare user's manuals for NB-series Programmable Terminal and read and understand safety precautions and necessary information before using the product.

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NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY OR IN LARGE QUANTITIES WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

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Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.

Errors and Omissions

Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.

CONTENTS

1 Related Manuals

The following manuals are related. Use these manuals for reference.

Cat. No.	Models	Manual name
V106	NB3Q-TW□□B(-V1) NB5Q-TW□□B(-V1) NB7W-TW□□B(-V1) NB10W-TW01B(-V1)	NB-series Programmable Terminals NB-Designer Operation Manual
V107	NB3Q-TW□□B(-V1) NB5Q-TW□□B(-V1) NB7W-TW□□B(-V1) NB10W-TW01B(-V1)	NB-series Programmable Terminals Setup Manual
V108	NB3Q-TW□□B(-V1) NB5Q-TW□□B(-V1) NB7W-TW□□B(-V1) NB10W-TW01B(-V1)	NB-series Programmable Terminals Host Connection Manual
V109	NB3Q-TW□□B(-V1) NB5Q-TW□□B(-V1) NB7W-TW□□B(-V1) NB10W-TW01B(-V1)	NB-series Programmable Terminals Startup Guide Manual
SBSA-550	NB3Q-TW01B(-V1) NB5Q-TW01B(-V1) NB7W-TW01B(-V1) NB10W-TW01B(-V1)	プログラマブルターミナル NB シリーズ セットアップマニュアル
SBSA-551	NB3Q-TW01B(-V1) NB5Q-TW01B(-V1) NB7W-TW01B(-V1) NB10W-TW01B(-V1)	プログラマブルターミナル NB シリーズ 画面作成マニュアル
SBSA-552	NB3Q-TW01B(-V1) NB5Q-TW01B(-V1) NB7W-TW01B(-V1) NB10W-TW01B(-V1)	プログラマブルターミナル NB シリーズ ホスト接続マニュアル
SBSA-553	NB3Q-TW01B(-V1) NB5Q-TW01B(-V1) NB7W-TW01B(-V1) NB10W-TW01B(-V1)	プログラマブルターミナル NB シリーズ 導入ガイド

2 Precautions

2-1 Test Function

The Test Function is performed on PC, and it has different behaviors with actual NB running system. A problem may occur due to communication timing, cable differences and unexpected PC circumstances (such as freeze). When the Test Function is performed, please consider possible unexpected circumstances on the actual NB running system and confirm that any dangerous event will not occur beforehand.

3 Applicable models and specifications

3-1 Applicable models
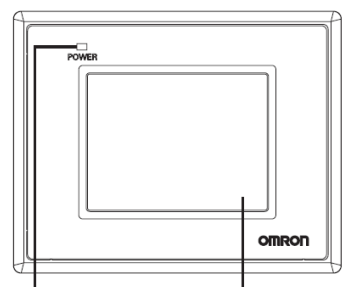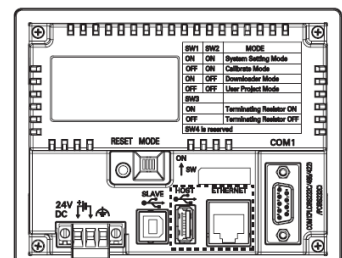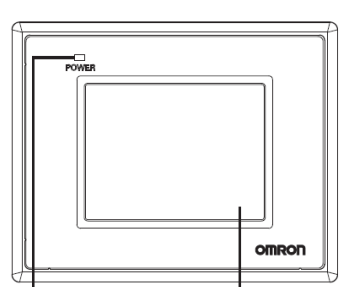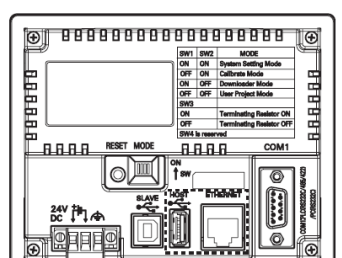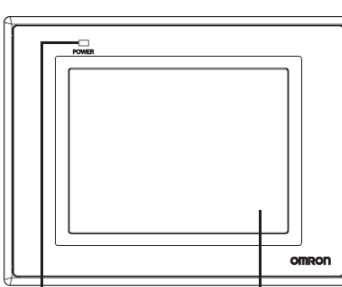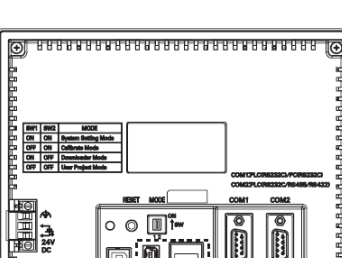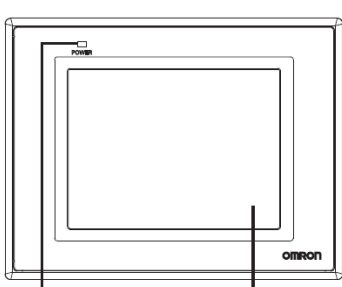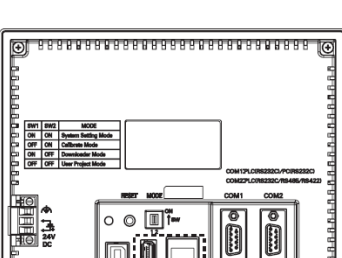
Discontinued Products		Recommended Replacements
Programmable Terminal		Programmable Terminal
NB3Q-TW00B		NB3Q-TW00B-V1
NB3Q-TW01B		NB3Q-TW01B-V1
NB5Q-TW00B	➡	NB5Q-TW00B-V1
NB5Q-TW01B		NB5Q-TW01B-V1
NB7W-TW00B		NB7W-TW00B-V1
NB7W-TW01B		NB7W-TW01B-V1
NB10W-TW01B		NB10W-TW01B-V1

3-2 Specifications

■ Body Color

Product models to be discontinued NB□□-TW□□B	Recommended replacement models NB□□-TW□□B-V1
Black	Black

■ Terminals/ Wire connection

Product models to be discontinued NB□□-TW□□B	Recommended replacement models NB□□-TW□□B-V1

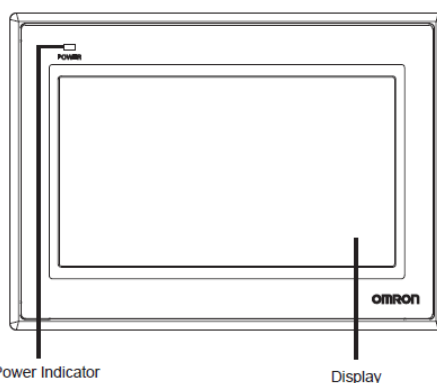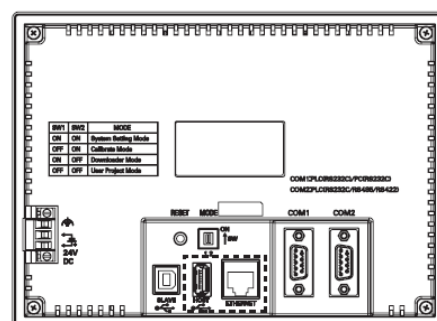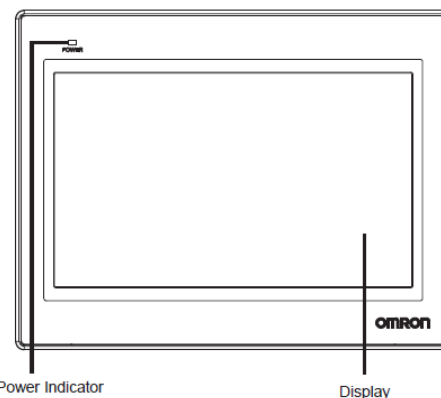| Product models to be discontinued NB□□-TW□□B	Recommended replacement models NB□□-TW□□B-V1
● **NB7W-TW00B/NB7W-TW01B model** Front view Power Indicator Display Back view [ ] : NB□□-TW01B only ● **NB10W-TW01B model** Front view Power Indicator Display Back view 	● **NB7W-TW00B -V1 /NB7W-TW01B -V1 model** Front view Power Indicator Display Back view [ ] : NB□□-TW01B -V1 only ● **NB10W-TW01B -V1 model** Front view Power Indicator Display Back view
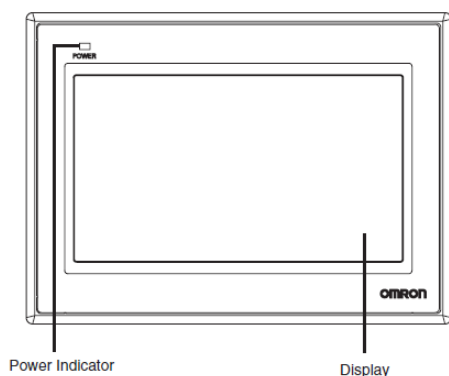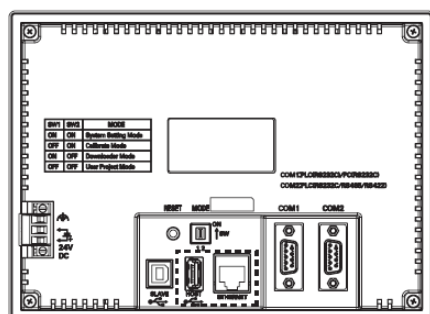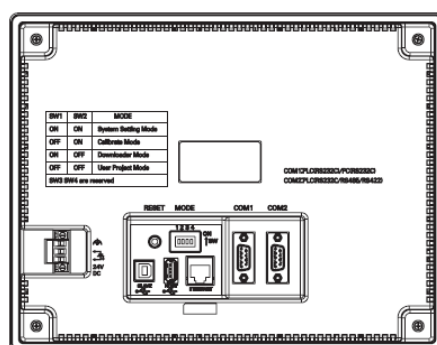
■Mounting dimensions

Discontinued Products NB□□-TW□□B	Recommended Replacements NB□□-TW□□B -V1
NB3Q-TW□□B **Panel cutout** 119.0(+0.5/-0) (W), 93.0(+0.5/-0) (H) Panel thickness: 1.6 to 4.8mm	**NB3Q-TW□□B -V1** **Panel cutout** 119.0(+0.5/-0) (W), 93.0(+0.5/-0) (H) Panel thickness: 1.6 to 4.8mm
NB5Q-TW□□B **Panel cutout** 172.4(+0.5/-0) (W), 131.0(+0.5/-0) (H) Panel thickness: 1.6 to 4.8mm	**NB5Q-TW□□B -V1** **Panel cutout** 172.4(+0.5/-0) (W), 131.0(+0.5/-0) (H) Panel thickness: 1.6 to 4.8mm
NB7W-TW□□B **Panel cutout** 191.0(+0.5/-0) (W), 137.0(+0.5/-0) (H) Panel thickness: 1.6 to 4.8mm	**NB7W-TW□□B -V1** **Panel cutout** 191.0(+0.5/-0) (W), 137.0(+0.5/-0) (H) Panel thickness: 1.6 to 4.8mm
NB10W-TW□□B **Panel cutout** 258.0(+0.5/-0) (W), 200.0(+0.5/-0) (H) Panel thickness: 1.6 to 4.8mm	**NB10W-TW□□B -V1** **Panel cutout** 258.0(+0.5/-0) (W), 200.0(+0.5/-0) (H) Panel thickness: 1.6 to 4.8mm

■Dimensions

Discontinued Products NB□□-TW□□□B	Recommended Replacements NB□□-TW□□□B -V1
NB3Q-TW□□B 129.8×103.8×52.8 (mm)	**NB3Q-TW□□B -V1** 129.8×103.8×52.8 (mm)
NB5Q-TW□□B 184.0×142.0×46.0 (mm)	**NB5Q-TW□□B -V1** 184.0×142.0×46.0 (mm)
NB7W-TW□□B 202.0×148.0×46.0 (mm)	**NB7W-TW□□B -V1** 202.0×148.0×46.0 (mm)
NB10W-TW□□B 268.8×210.8×54.0 (mm)	**NB10W-TW□□B -V1** 268.8×210.8×54.0 (mm)

■ Characteristics

Item	Discontinued Products NB□□-TW□□B							Recommended Replacements NB□□-TW□□B -V1						
	NB3Q		NB5Q		NB7W		NB10W	NB3Q-V1		NB5Q-V1		NB7W-V1		NB10W-V1
	00	01	00	01	00	01	01	00	01	00	01	00	01	01
Display device	TFT LCD							TFT LCD						
Resolution	QVGA 320×240		QVGA 320×234		WVGA 800×480			QVGA 320×240		QVGA 320×240		WVGA 800×480		WSVGA 1024×600
Color	65536 colors							65536 colors						
Support software	NB-Designer Ver1.531 less than							NB-Designer Ver1.60 or higher						
External Interfaces	Ethernet ports (Only NB□□-TW01B supports), USB host port, USB slave port *1, Serial port (2 ports, 1 port for NB3Q)							Ethernet ports (Only NB□□-TW01B-V1 supports), USB host port, USB slave port *1, Serial port (2 ports, 1 port for NB3Q)						
External storage device	USB Memory Device (Only for -TW01B)							USB Memory Device (Only for -TW01B-V1)						
Backlight life	50,000 hours min.							50,000 hours min.						
Ambient operating temperature	0 to 50℃							0 to 50℃						
Communications method	Host Link, Ethernet *2							Host Link, Ethernet *2						

*1 NB-V1 does not support printing functions.

  When printing the screen, please take a screenshot of the NB-Designer screen and print it.

*2 As to PLCs that can be connected to NB, refer to NB-series Programmable Terminals Host Connection Manual.

4 Workflow

4-1 Workflow

The replacement procedure with NB-V1 is as follows. Operations in ▮ are explained from the next page.

4-2 Preparation

4-2-1 Confirmation of replaceability

4-2-2 Uploading the project from the existing NB

4-2-3 Converting the project for NB-V1

4 -3 Removing the currently installed NB

4-3-1 Turning OFF the power to the currently installed NB

4-3-2 Removing all cables

4-3-3 Removing the storage devices

4-3-4 Removing the currently installed NB from the operation panel

4-4 Installing NB-V1

4-4-1 Installing the NB-V1 to the operation panel

4-4-2 Wiring the cables

4-4-3 Installing the storage devices

4-5 Start-up

4-5-1 Turning ON the power to the NB-V1

4-5-2 Downloading the project to the NB-V1

4-5-3 Checking the settings and communications

4-5-4 Starting operation

4-2 **Preparation**

4-2-1 Confirmation of replaceability

Refer to NB-series Programmable Terminals Host Connection Manual (V108-E1) if the current used PLC is supported by the NB-V1.

4-2-2 Uploading the project from the existing NB
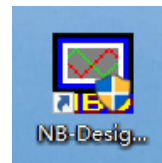
Start the NB-Designer. *NB-Designer Ver.1.60 or higher must be installed in the computer.	
1. The procedures in this chapter assume that uploading and decompiling are enabled in the settings of the screen data transferred to the NB. A password is also required for uploading and decompiling. Please use the password set at the time of screen transfer. *The default password for upload is 888888.	
2. Select Upload from the Tools Menu.	
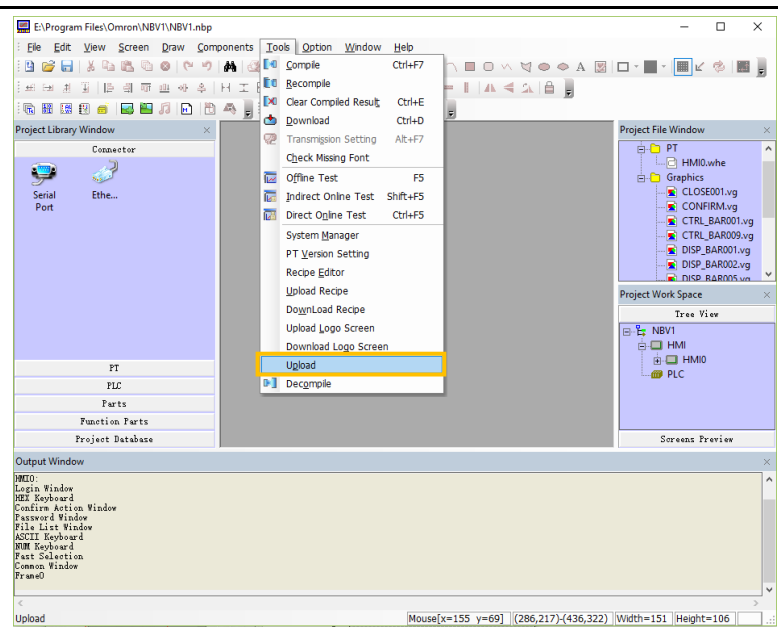
3. Select Set button, choose Communication Method and press OK button.
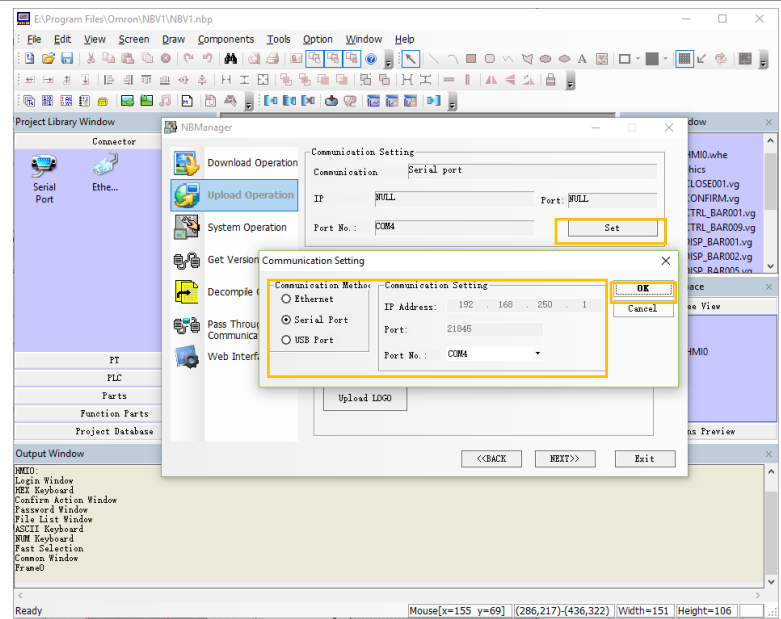
4. Press Upload Project File. Select Project Data , Logo File and Recipe File as needed.
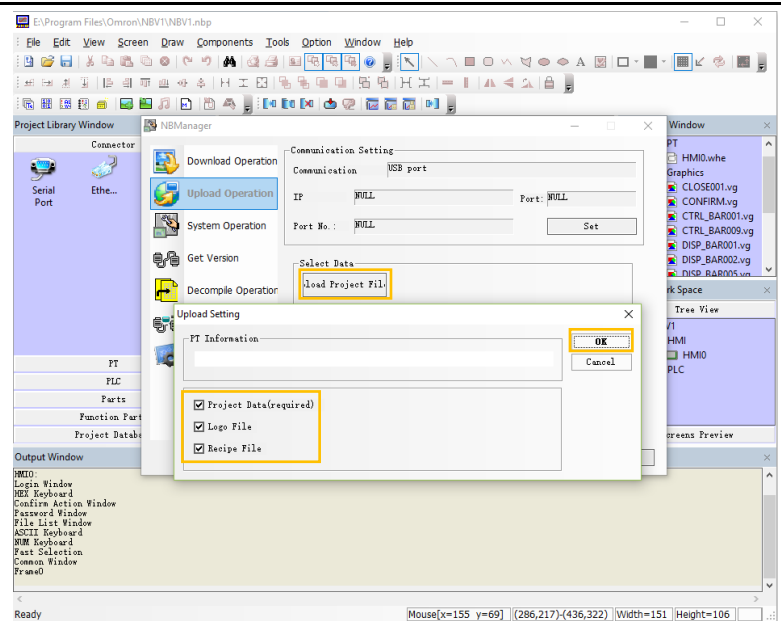
5. Input the project name, and specify save destination then select the Save Button.
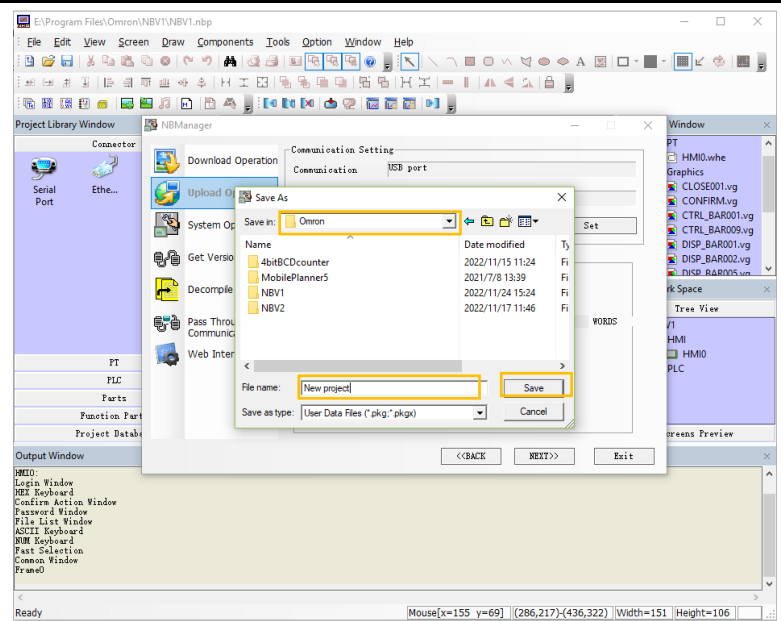
6. Input password for upload, then press OK button. The file is saved in the specified folder.
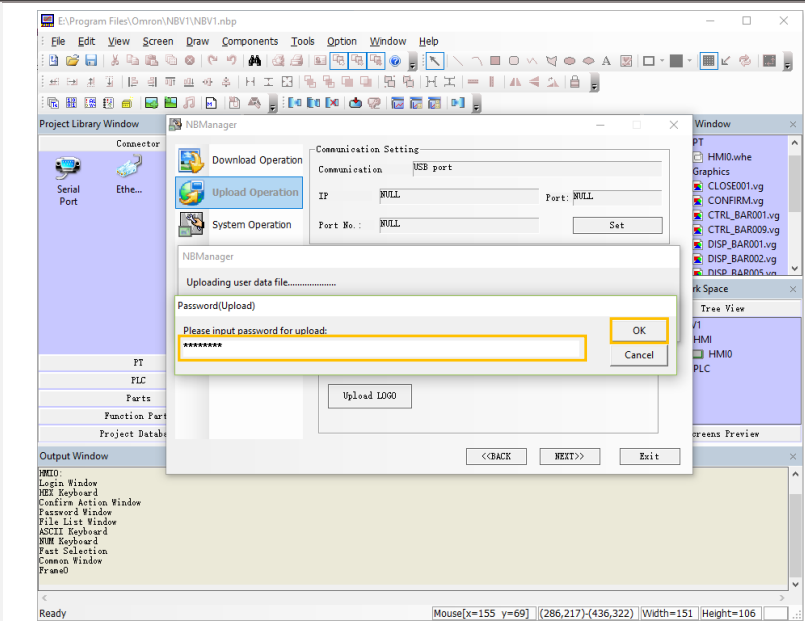
7. Select Import Project from the HMI Menu.
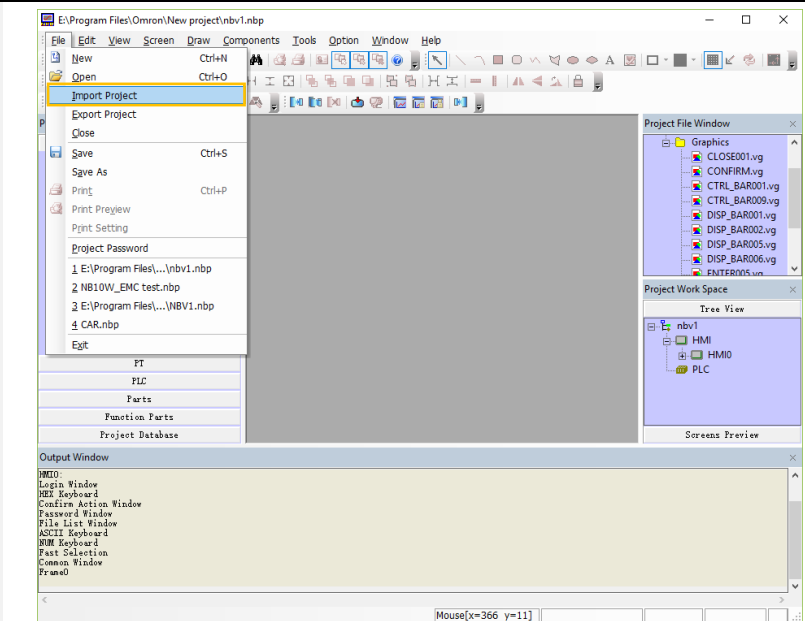
8. Select the upload .pkg file, press Open button.
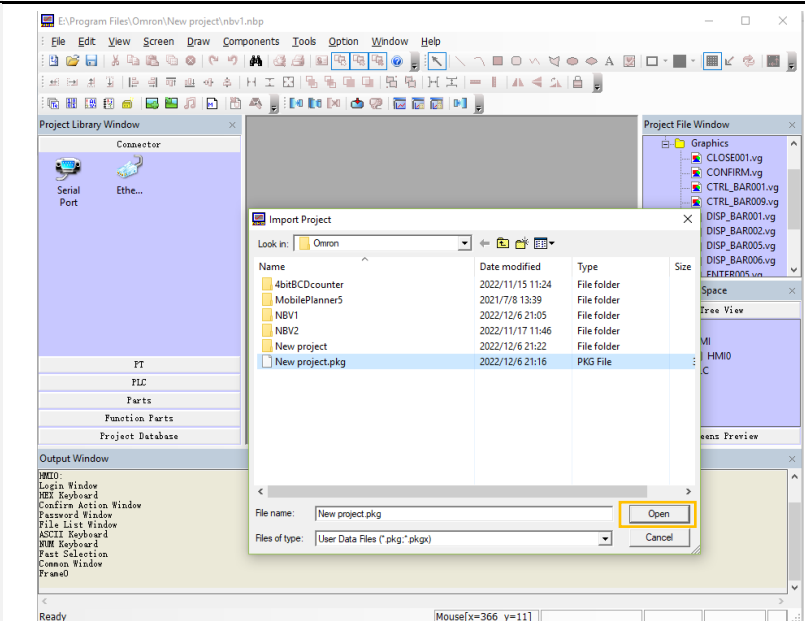
9. Input password, press OK button. The file is open.	
Go to *4-2-3 Converting the project for NB-V1.*	-
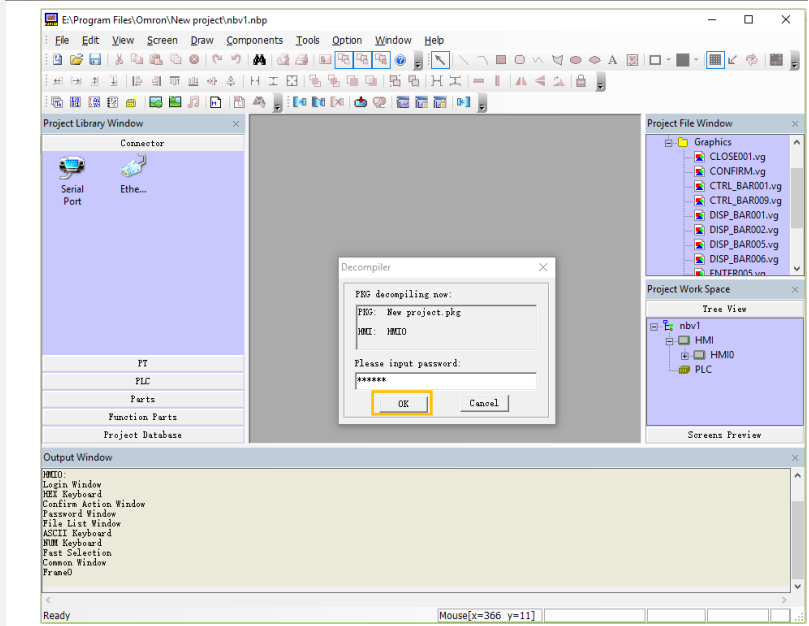
4-2-3 Converting the project for NB-V1

1. While the NB-Designer is in offline state and the uploaded project is opened, right-Select the HMI Icon and select Change PT model from the menu.

   ＊ *NB5Q and NB10W have different resolutions. Please check the screen.

   After the PT is replaced, the original user edit screen will be adjusted by related scales according to the difference of the resolution of various types. All the components with screen display will adjust automatically. For example, all the components (such as the bitmaps, Vector Graphics, button and lamp, etc.) with location and size adjustments can all change their sizes automatically. However, note that there are a few exceptions: as the font size of text strings and label can't be changed, the components using text strings and label will be restricted to mainly display the text in the minimum display area when size changes, especially when it becomes smaller as square components like the Analog Meter change sizes in a "square" way, the changed sizes may disrupt the proportion among the component sizes, therefore it requires a second fine-adjustment by the user.
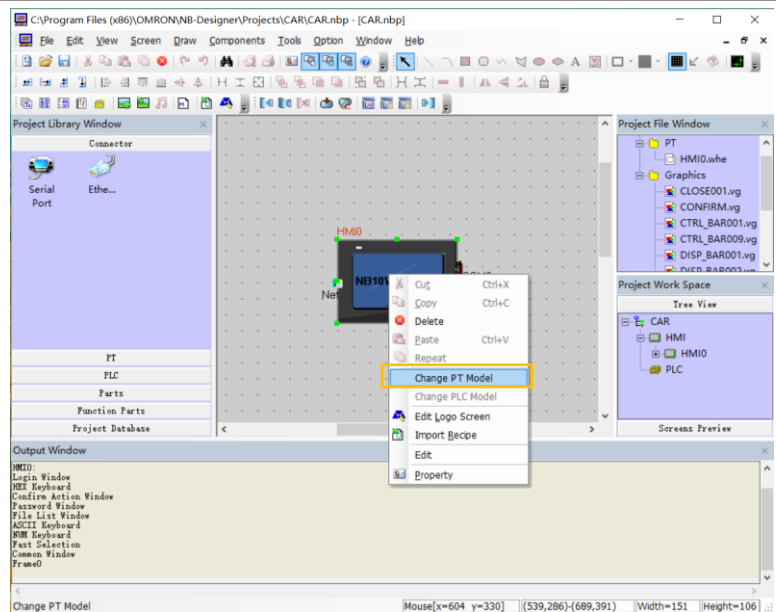
|	
2. Select NB-V1 device model, and then Select the OK Button. *The NB-V1 project data cannot be converted to NB project.	
3. The warning message is displayed. Select the YES Button. *This message is displayed when the device is changed.	
4. The warning message is displayed. Select the OK Button. *This message is displayed when the device version is updated. *Go to No.5, if you are exporting the NB-V1 project. Go to *4-3 Removing the currently installed NB* if you do not have to export the project. Export operation is performed to save the NB-V1 project.	
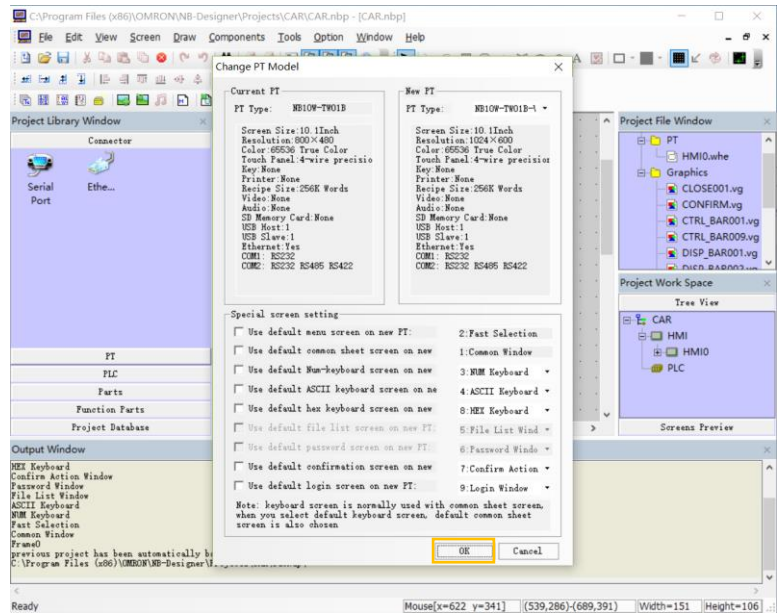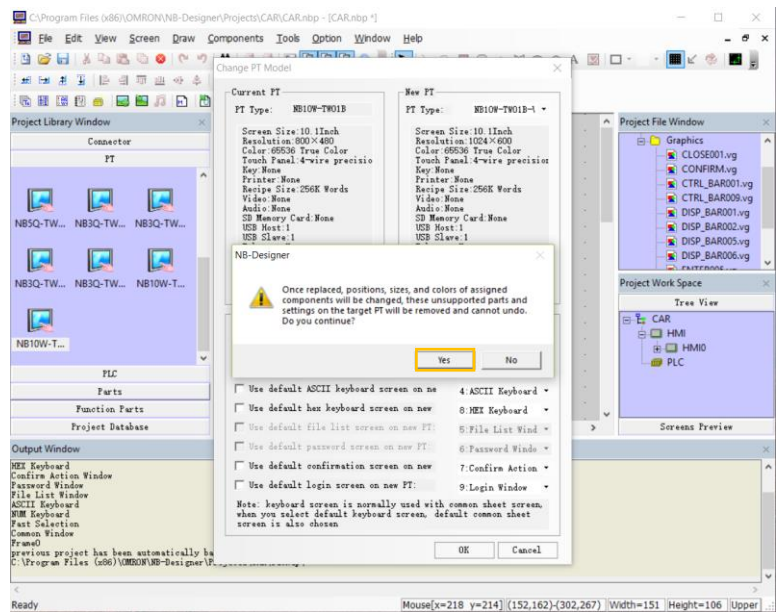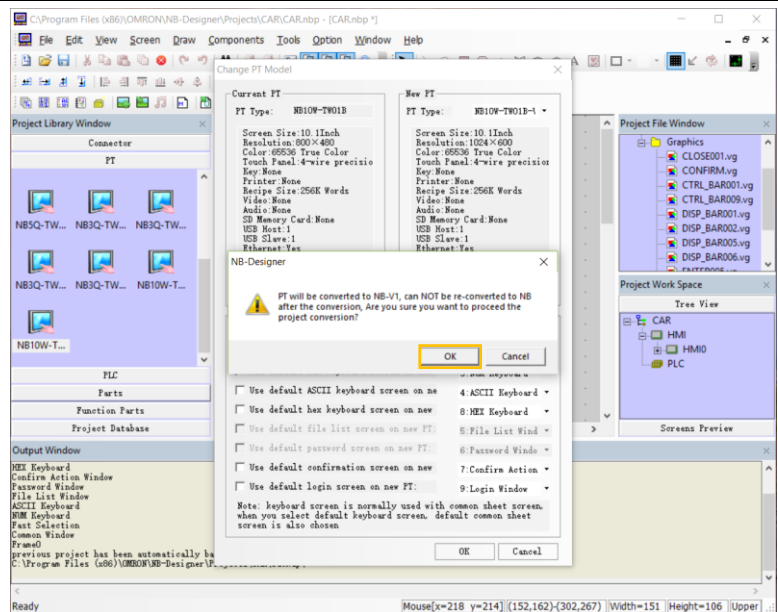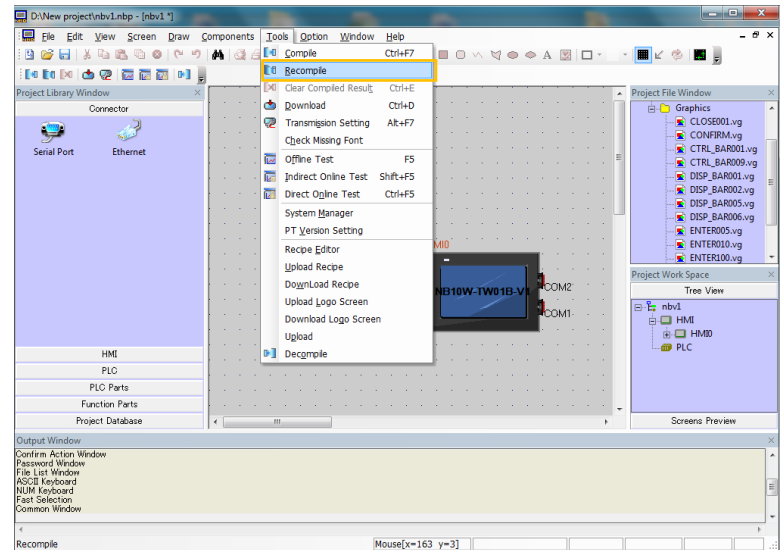
5.	Select Recomple from Tools menu.	
6.	Select Save As from the File Menu.	
7.	Input the project name, and then Select the OK Button.	
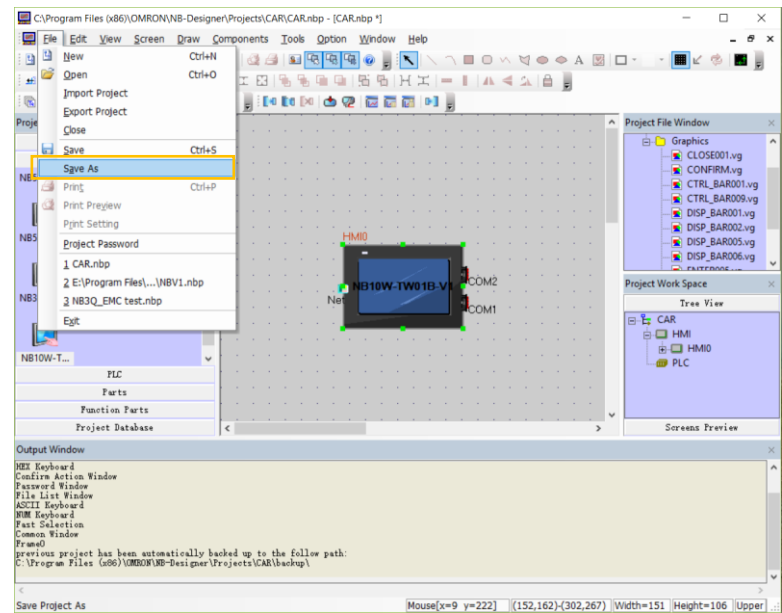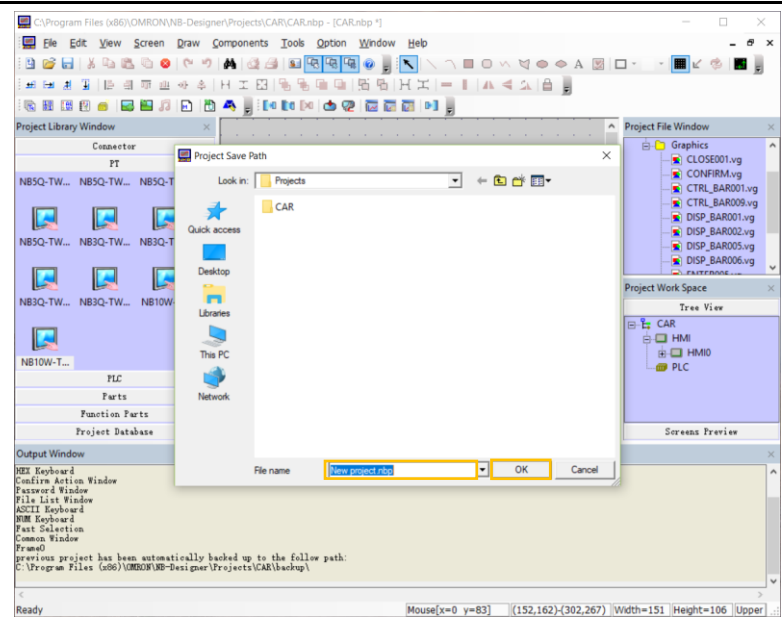
8. Select Export Project from the File Menu.
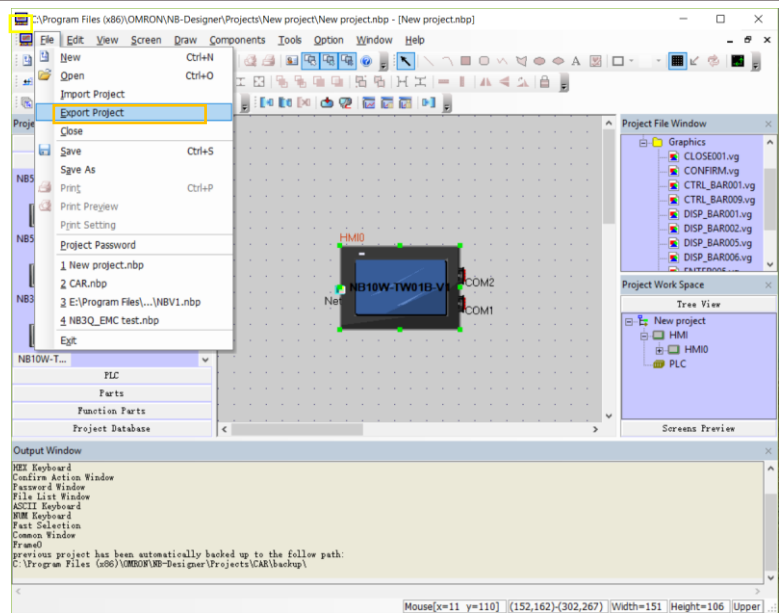
9. Specify export destination, input the file name, and then Select the OK Button. The project file is saved in the specified folder.
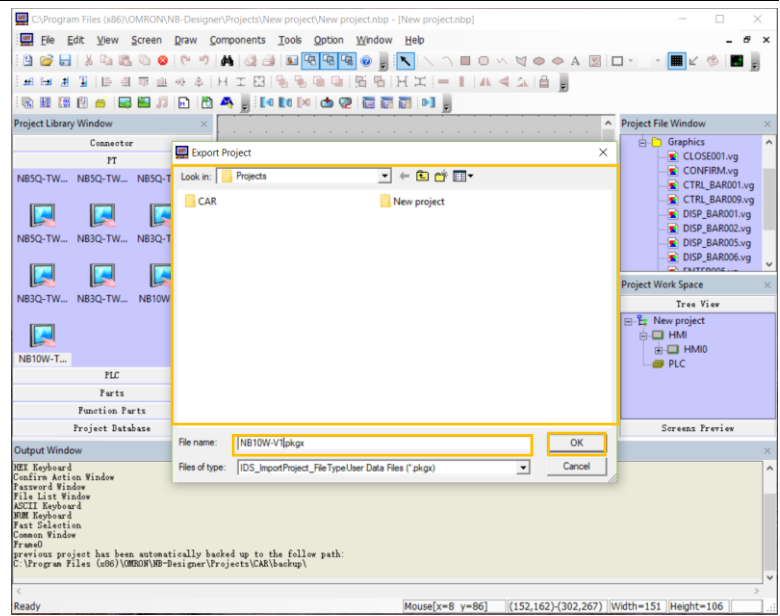
10. Go to *4-3 Removing the currently installed NB.*

-

4-3 Removing the currently installed NB

4-3-1 Turning OFF the power to the currently installed NB

Turn OFF the 24V DC power supply to the NB.

4-3-2 Removing all cables

Remove all the cables connected to the NB.

4-3-3 Removing the storage devices (if used)

Remove the USB memory.

4-3-4 Removing the currently installed NB from the operation panel

Remove the currently installed NB from the operation panel.

4-4 Installing NB-V1

4-4-1 Installing the NB-V1 to the operation panel

Mount the NB-V1 to the operation panel using panel mounting brackets and a screwdriver.

4-4-2 Wiring the cables

Connect all the cables for the NB-V1.

4-4-3 Installing the storage devices (If necessary)

Install the USB memory.

4-5 **Start-up**

4-5-1 Turning ON the power to the NB-V1

Turn ON the 24V DC power supply to the NB-V1.

4-5-2 Downloading the project to the NB-V1

If you download the project with a USB cable, you need to install the driver.
For details on how to install the USB driver, refer to "2-4 Installation of USB driver for NB" in "NB-Designer Operation Manual" (V106-E1).

1. Select Download from the Tools Menu, while the project converted for the NB-V1 is opened.	
2. Press Download button.	
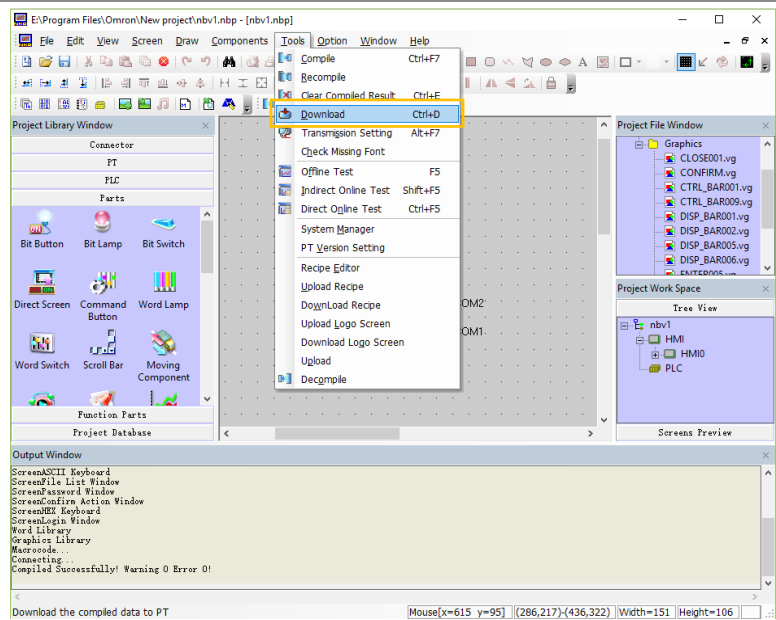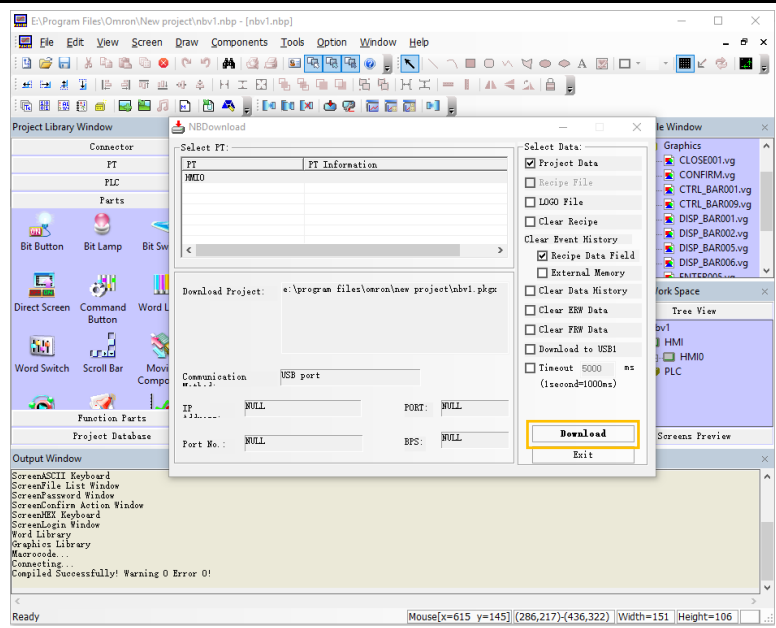
3. Select the Yes Button. The data is downloaded, and the HMI restarts.
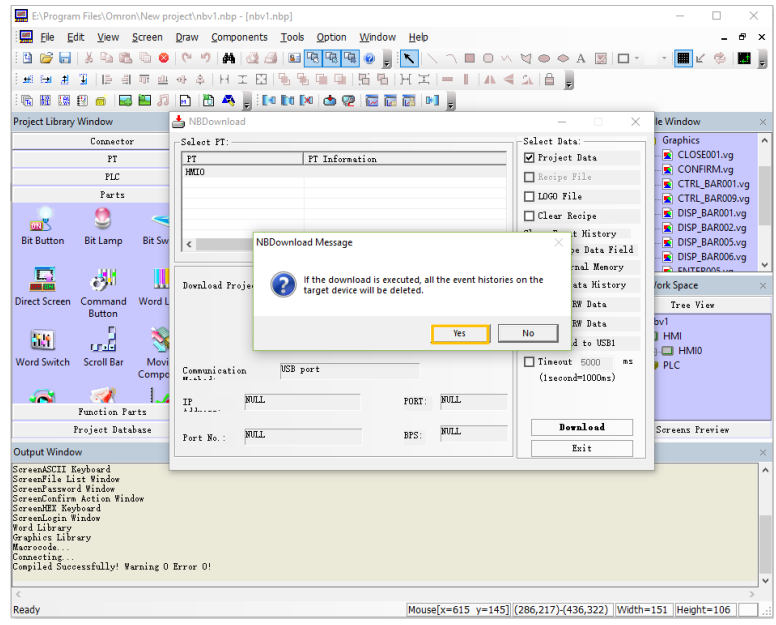
4-5-3 Checking the settings and communications

Run the project on the actual system and check that correct values are written to the connected device, the pages change correctly, and values set at the connected device are updated.

4-5-4 Starting operation

Start actual operation.

Appendix-1 Transferring project data by using a media device

Even if NB-Designer is not available, project files can be transferred by using a media device.
**NB-Designer is required for screen conversion.

4-2-2 Uploading the project from the existing NB   -> Go to A-1-1
4-5-2 Downloading the project to the NB-V1   -> Go to A-1-2

These functions are described in the following sections.

A-1-1 Uploading by using a storage media

1. Insert the USB memory device to use for the upload into the computer.	
2. Enter the System Setting Mode following the procedures below. (1) Set both the DIP switches SW1 and SW2 on the back side to ON. (2) Press the Reset switch, restart the NB Unit, and then it enters into the System Setting Mode.	
3. Touch the USB←HMI button. *Uploads the user project file required by the PT operation to the USB memory.	
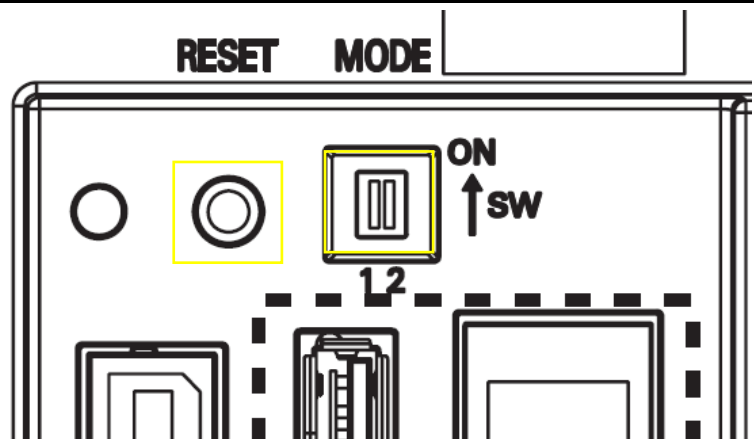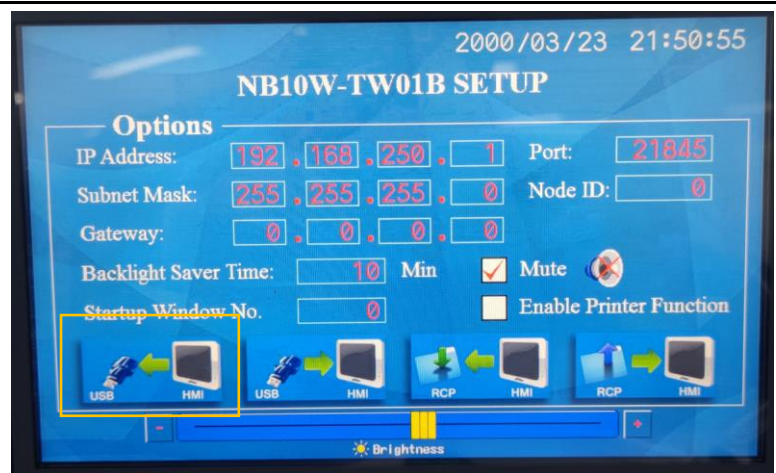
|	
4. Specify the destination media and file name and touch the OK Button. The project is uploaded to the specified media.	
5. Input password. The upload password is required during the export. If the upload password is not set, it needs to use the default password of 888888.	
6. Touch the RCP←HMI button. *Uploads the user project file required by the PT operation to the USB memory.	
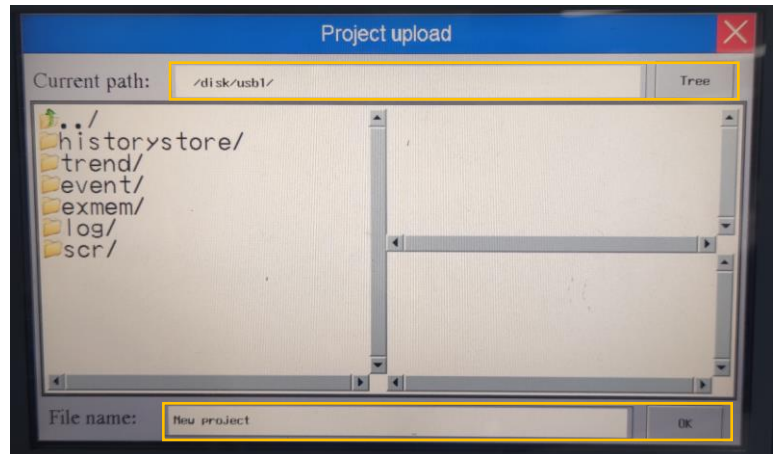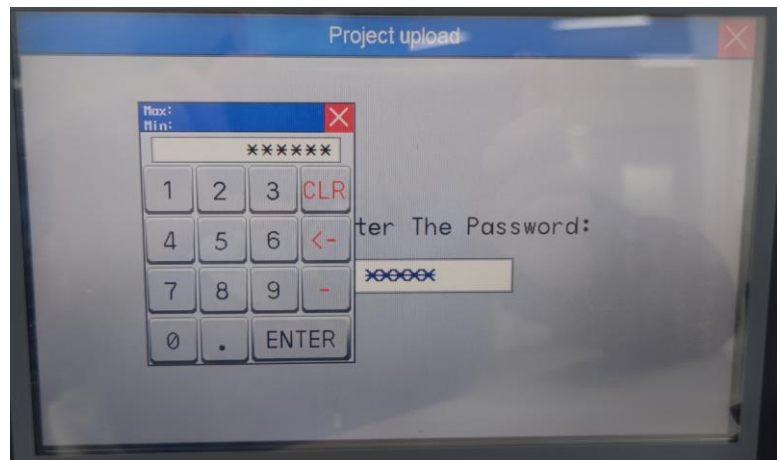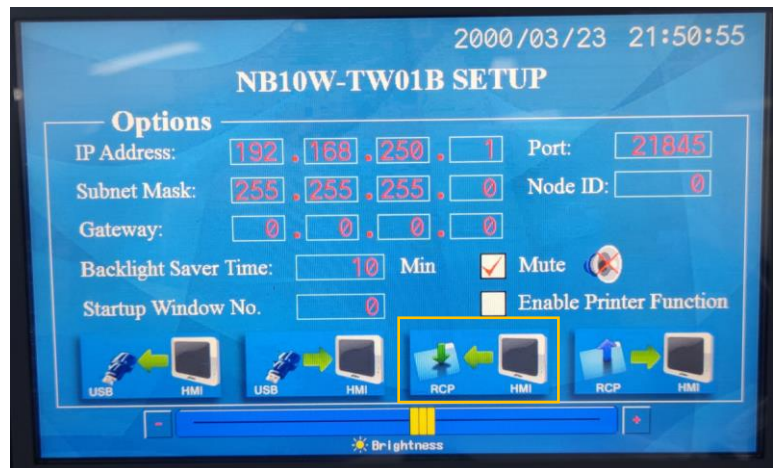
7. Specify the destination media and file name and touch the OK Button. The recipe is uploaded to the specified media.	
8. Remove the media from the NB.	
9. Insert the media device to which the project was uploaded to the computer and start the NB-Designer . *NB-Designer Ver.1.60 or higher must be installed in the computer.	
10. When the NB-Designer starts, select Import Project from File menu.	
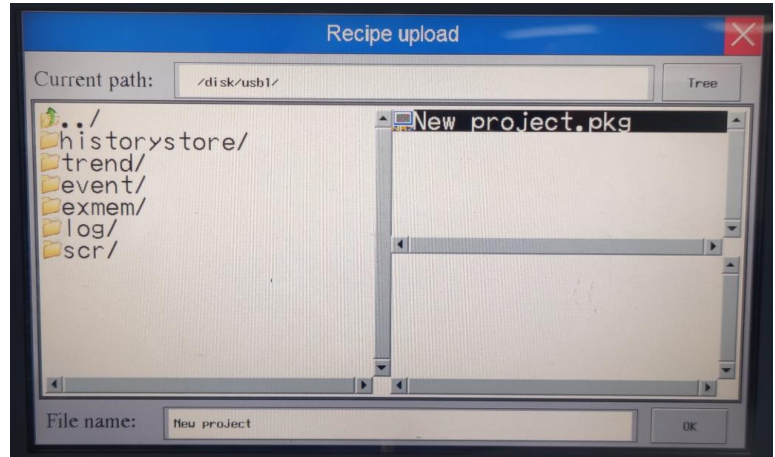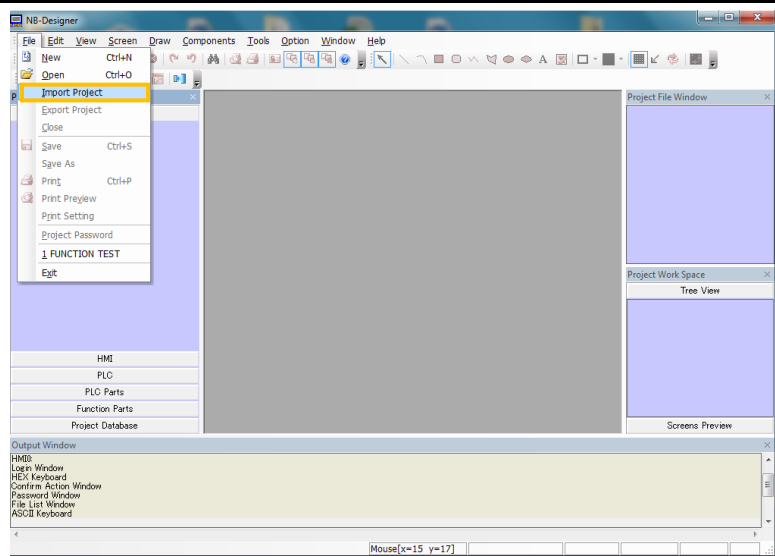
11. Open the destination media and select the project file you upload from NB and touch the Open Button.
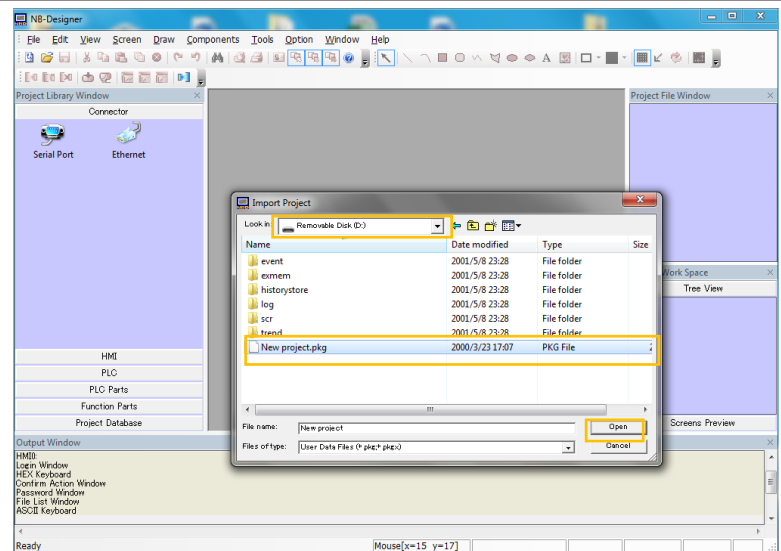
12. Input password, press OK.
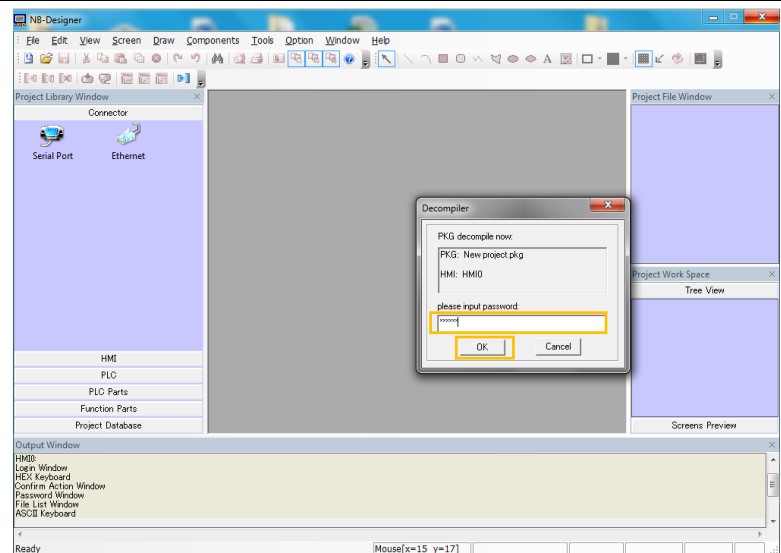
13. The warning message is displayed.
Select the OK Button.
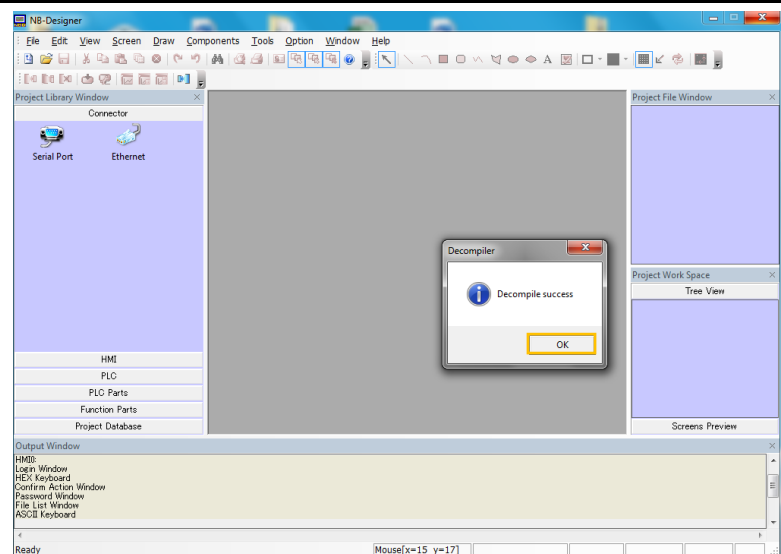
14. Right-Select the HMI Icon and select Change PT model from the menu.
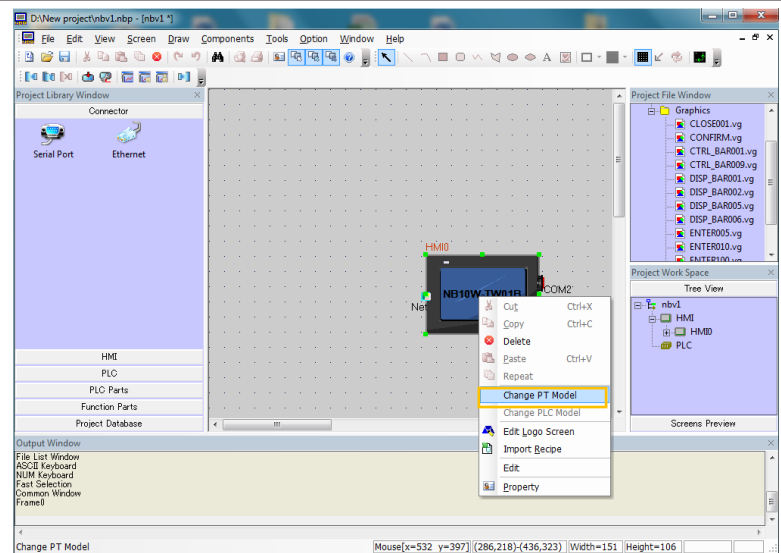
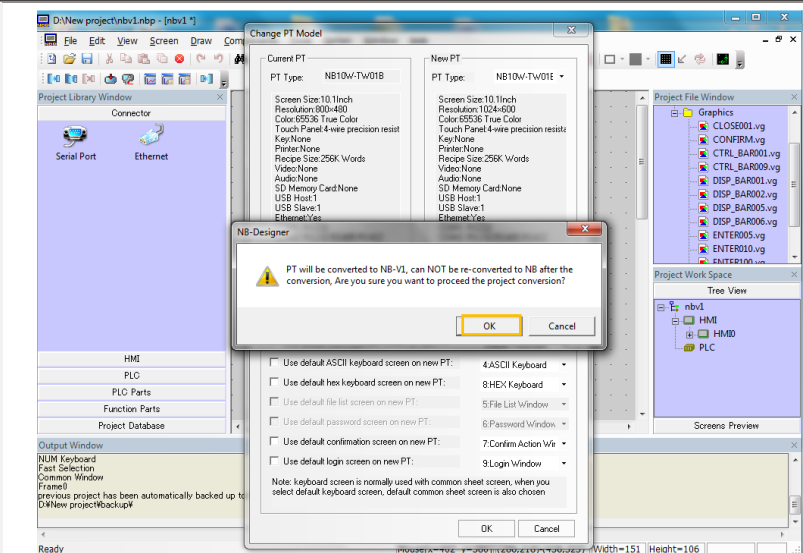15. Select NB-V1 device model, and then Select the OK Button.
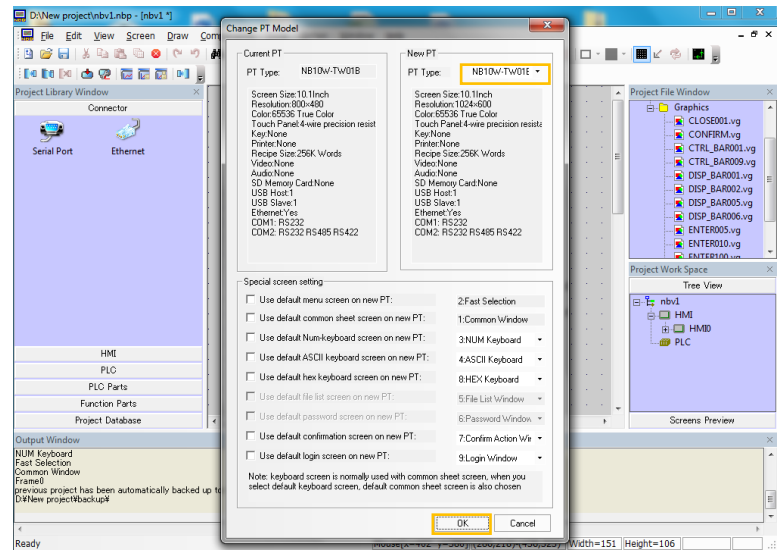
16. The warning message is displayed.
Select the Yes Button.
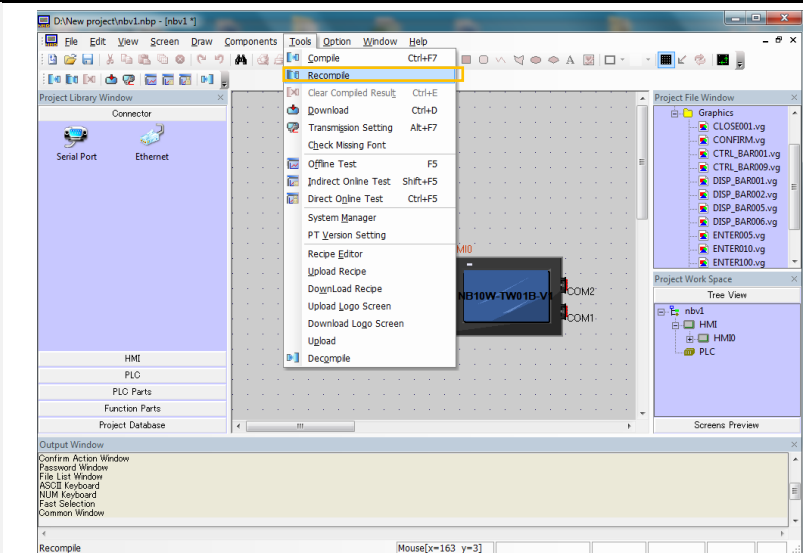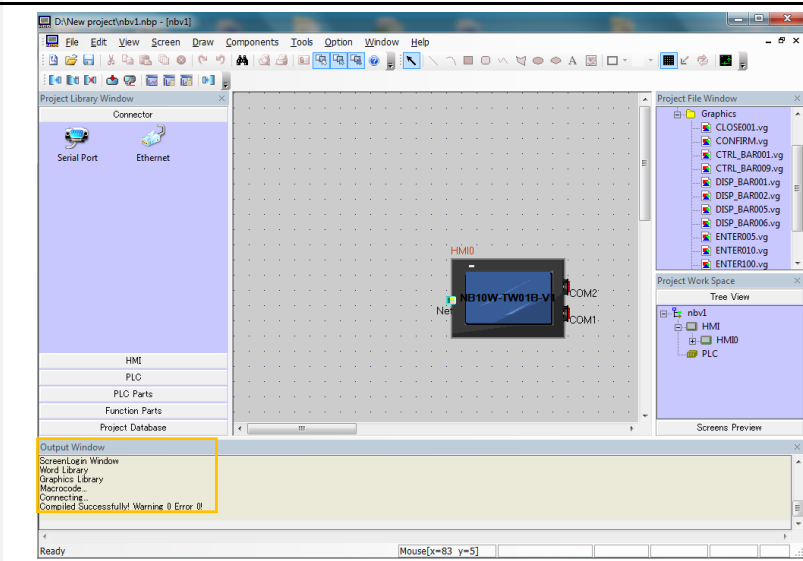*This message is displayed when the device is changed.

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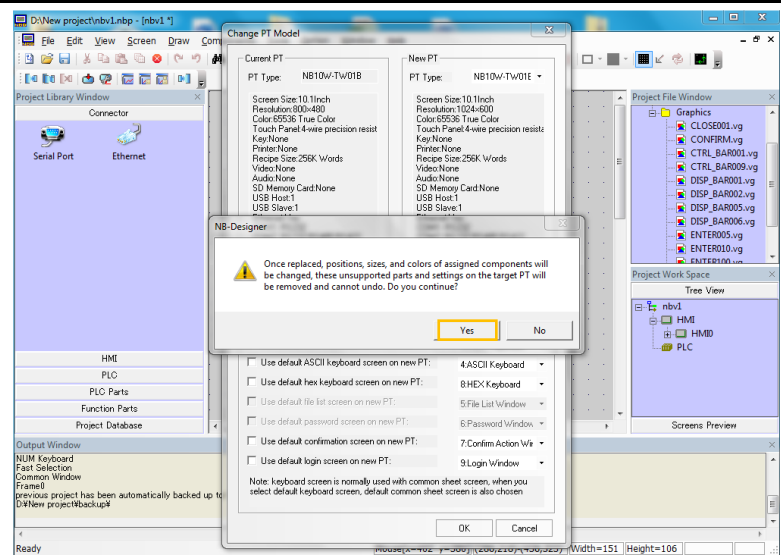
17. The warning message is displayed.

Select the OK Button.

*This message is displayed when the device version is updated.
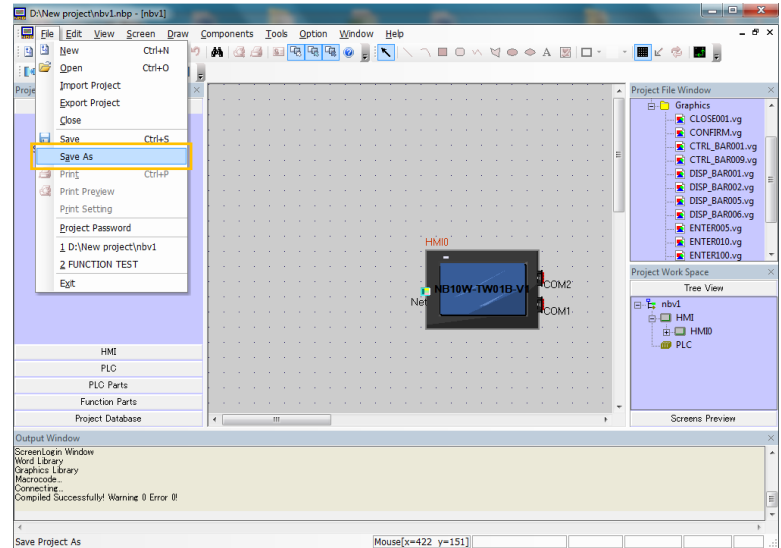

18. Select Recomple from Tools menu.
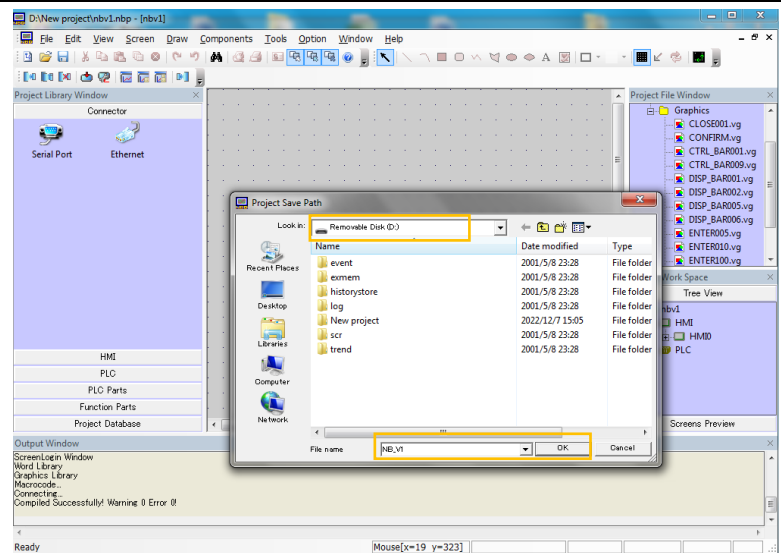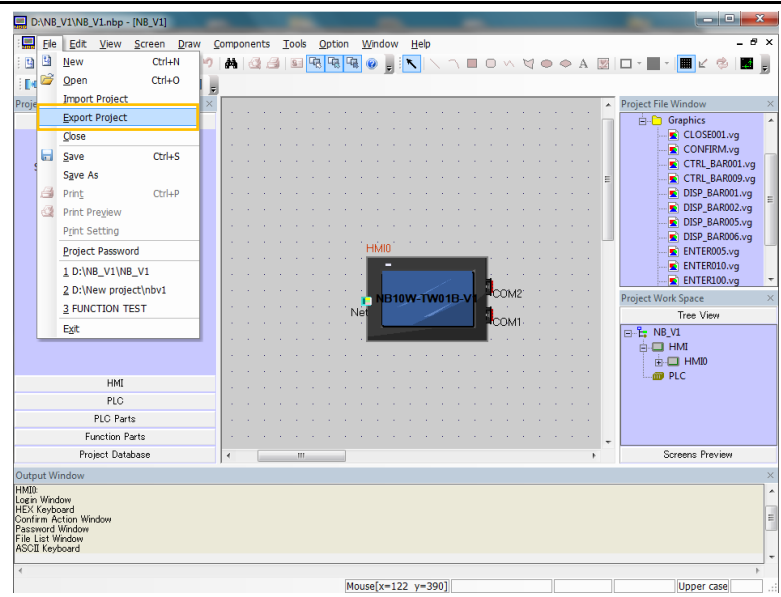

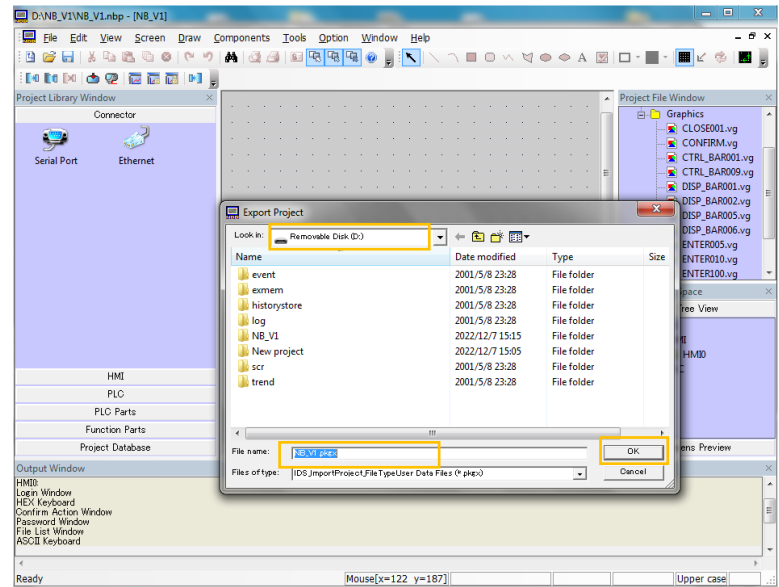19. Compiled Successfully.

20. Select Save As from File menu.

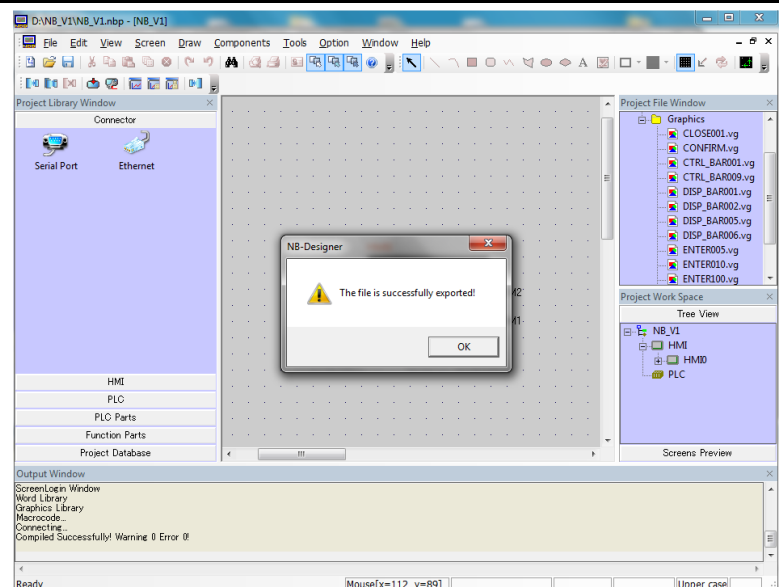21. Specify the destination media and file name and touch the OK Button.

22. Select Export Project from the File Menu.

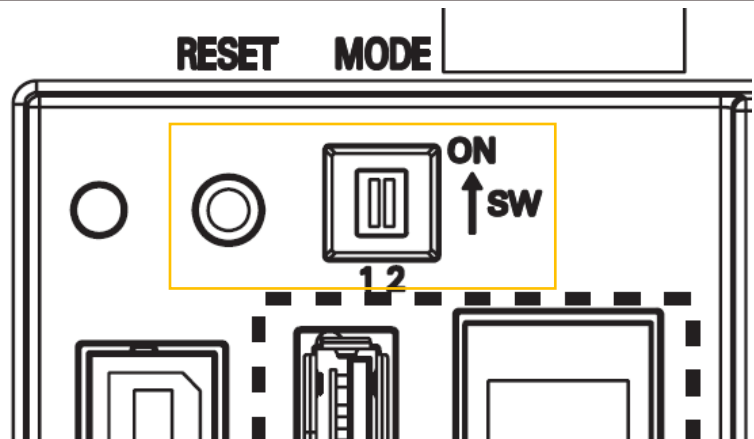| 23. Specify the destination media and file name and touch the OK Button.	
24. The file is successfully exported. Touch the OK Button.	

A-1-2 Downloading by using a storage media

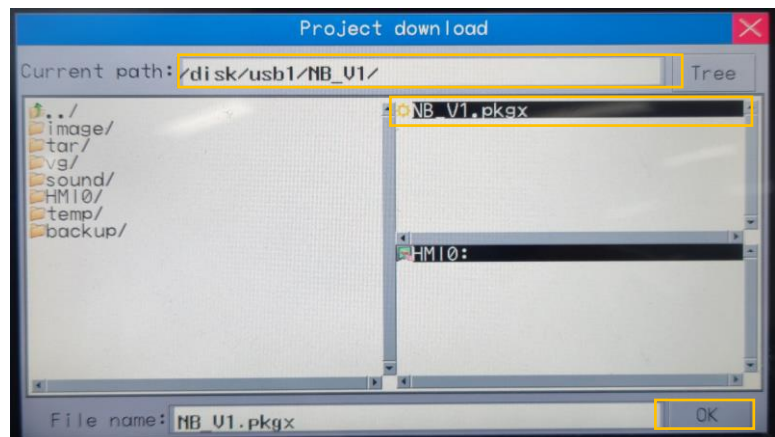| 1. Insert the storage media into the HMI for the download into the HMI.	-

|	
2. Enter the System Setting Mode following the procedures below. (1) Set both the DIP switches SW1 and SW2 on the back side to ON. (2) Press the Reset switch, restart the NB Unit, and then it enters into the System Setting Mode.	
3. Touch the USB to HMI Button.	
4. Select the .pkgx project to download and touch the OK Button. The selected project is downloaded to the HMI.	
5. Touch the RCP to HMI Button.	
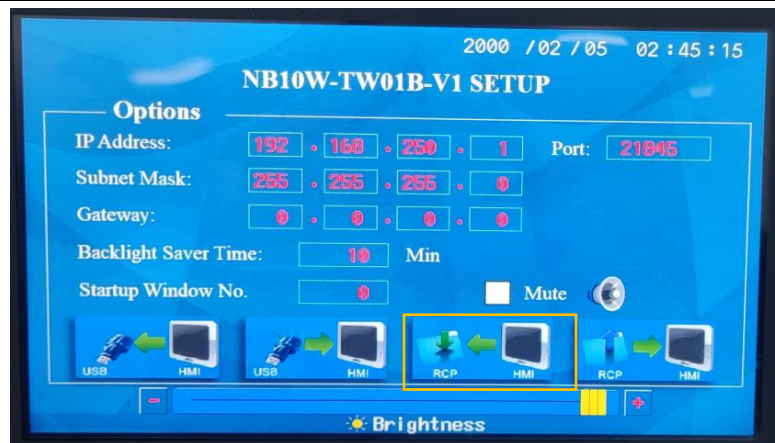
6. Select the .rcp file to download and touch the OK Button. The selected file is downloaded to the HMI.
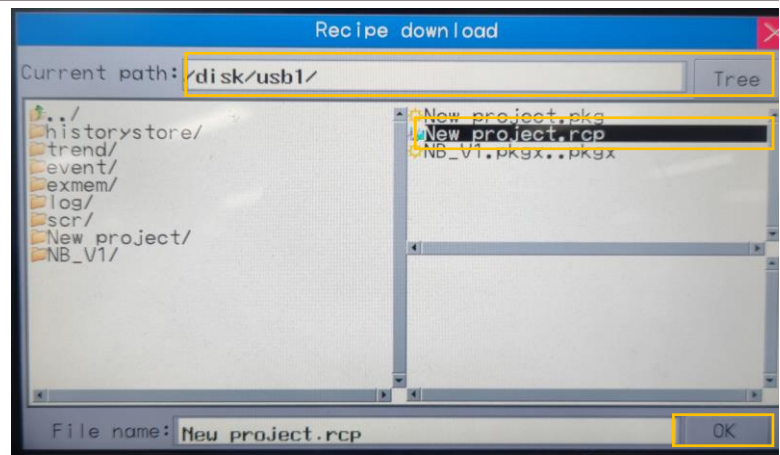
Revision History

Revision History	Date	Revised content
A	February 2023	Original production