MICREX-SX   How-to Guide

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Fuji Electric Co., Ltd.

Procedure for Downloading Program to CPU module using User ROM (CF/SD card) (For Expert loader)

1. Overview

This How-to Guide describes the procedure for downloading a program to multiple MICREX-SX series CPU modules that support a user ROM card (CF/SD card) (Type: NP1PS-**R, NP1PM- ***, and NP1PU-***) by using a user ROM card.
You can download programs without a programming support tool on site.
In addition, the same project can be efficiently downloaded to multiple CPU modules.
In this guide, the program download procedure using SX-Programmer Expert (D300win) (hereinafter abbreviated as D300winV3) is described.
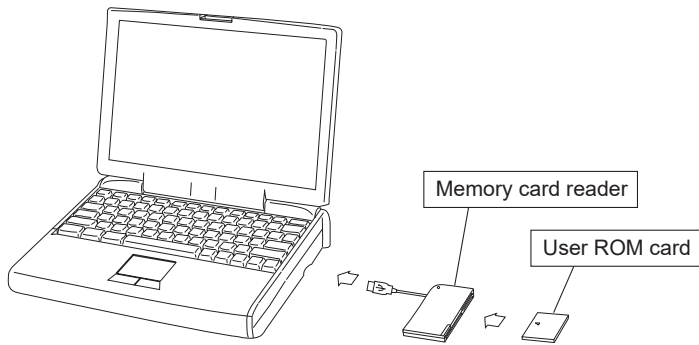
2. Flowchart of Program Download

The figure below shows the flowchart of program download using a user ROM card.
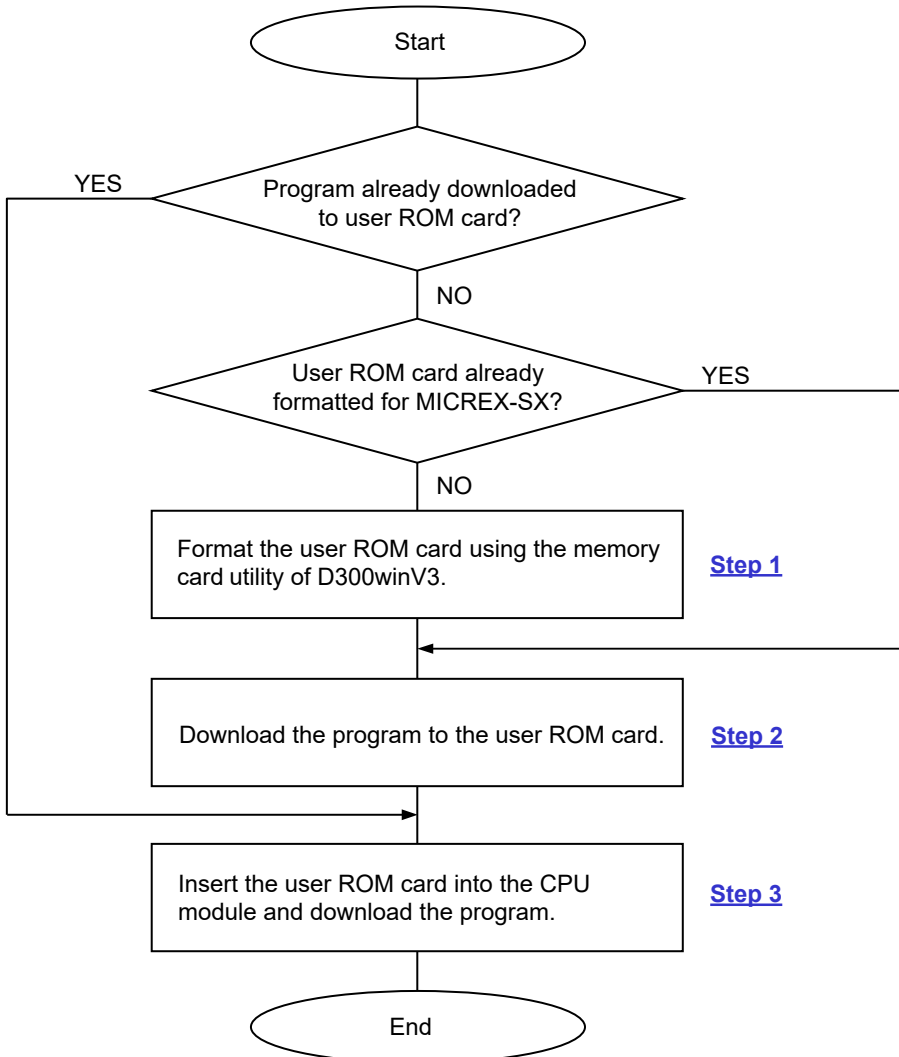
3. Step 1   Formatting a User ROM Card

1) Insert the user ROM card (CF/SD card) into a memory card reader (commercially available item), and then connect it into your computer. Confirm that the computer recognizes the CF/SD card.

Memory card reader

User ROM card

2) Start D300winV3 and open a project of a program that you want to download to the user ROM card. Compile the project beforehand.
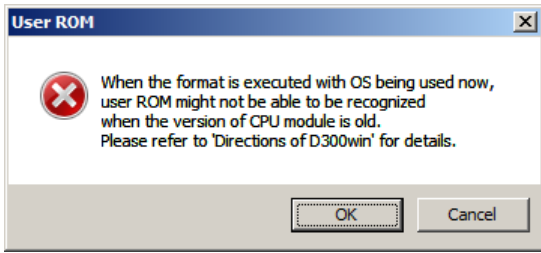   In the [Extras] menu, select "Memory Card Utility." Then, click the [User ROM] button.
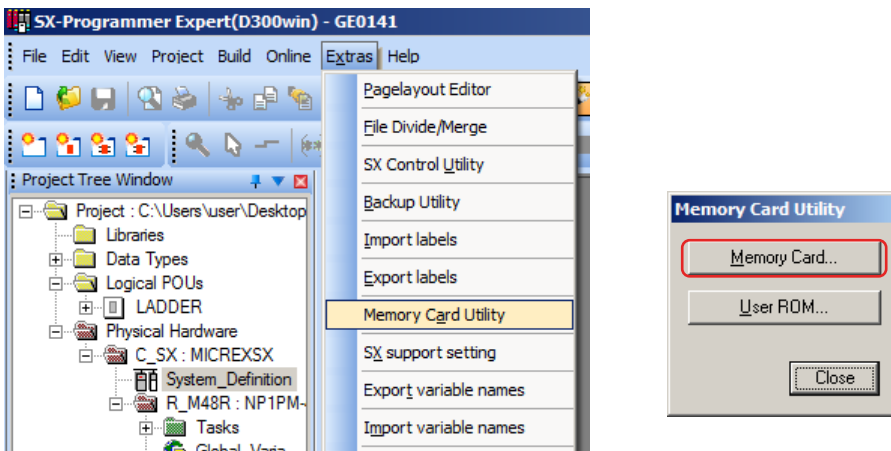
3) On the "User ROM" dialog box, click the [Maintenance] tab.
   Select the drive where the user ROM card is connected for "Drive."

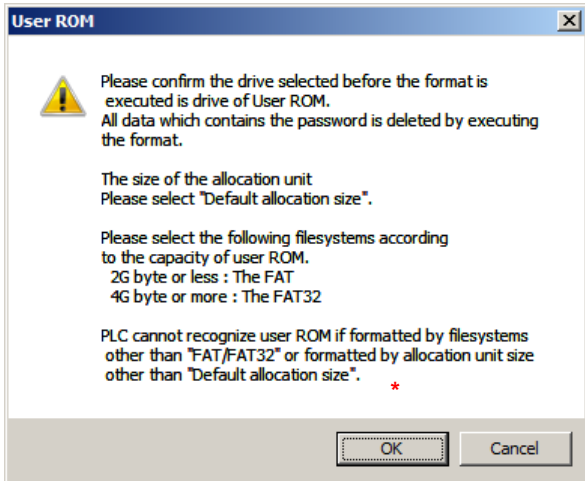Specify the drive of the computer where the user ROM card is connected.
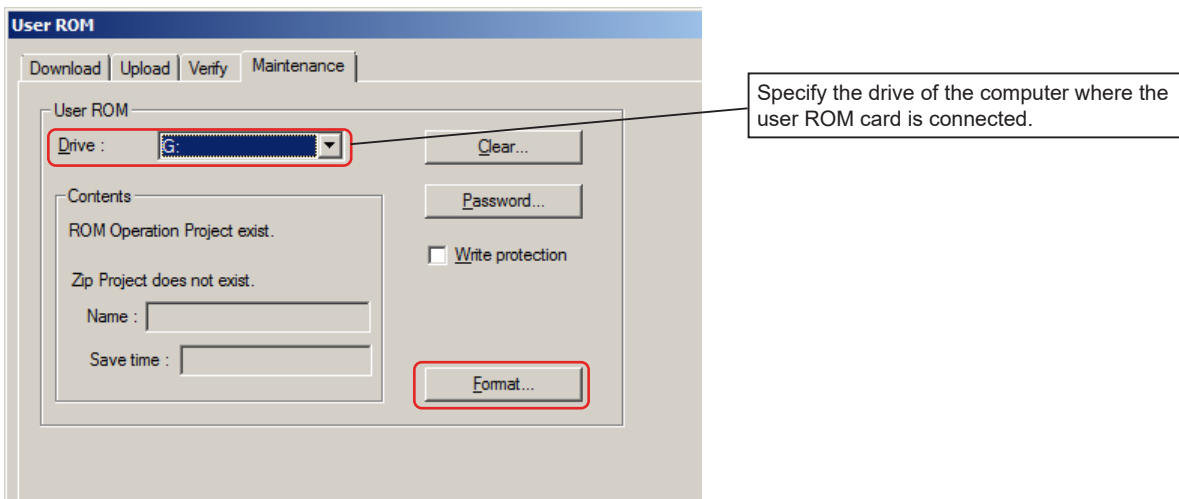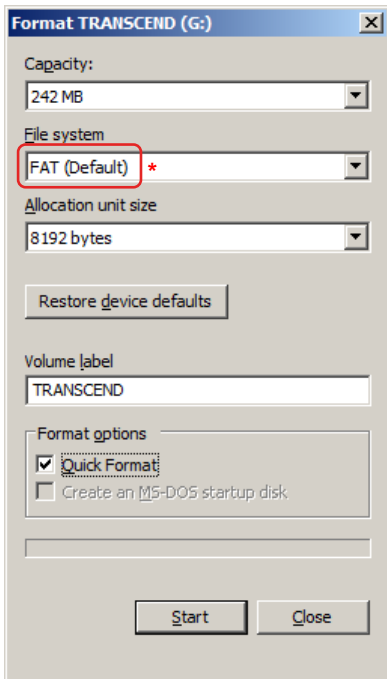
4) Click the [Format] button.

The following confirmation dialog box appears. Click the [OK] button.

The following dialog box appears next. Make sure that the user ROM is connected to the specified drive, and then click the [OK] button.
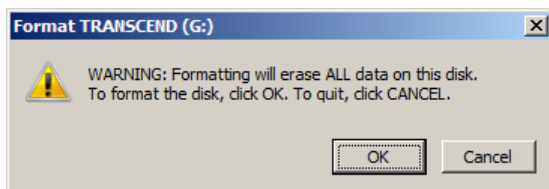

5) The "Format" dialog box appears. Select "FAT" for "File system." Do not change the other items.


* When creating a user ROM card for SPH2000/3000, you can also format it in "FAT32."

6) Click the [Start] button. The following confirmation dialog box appears. Clicking the [OK] button starts formatting.

Format TRANSCEND (G:)

WARNING: Formatting will erase ALL data on this disk.
To format the disk, click OK. To quit, click CANCEL.

OK   Cancel

7) When the formatting is completed, the dialog box appears saying "Format Complete." Click the [OK] button.

Formatting TRANSCEND (G:)

Format Complete.

OK
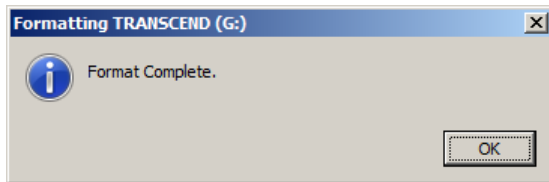
* The formatting may take a few seconds to tens of seconds. Be sure to wait until the above dialog box appears.

8) Click the [Close] button on the "Format" dialog box to return to the [Maintenance] tab window.
   Go on to **Step 2-1 2)**.

4. Step 2   Downloading a Program to the User ROM Card

(1) Step 2-1: Downloading a program to the user ROM card using the memory card utility of D300winV3

1) When the user ROM card is already formatted, execute **Step 1 1) to 2)**.
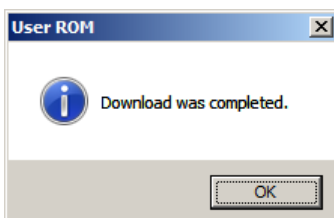2) Click the [Download] tab of the "User ROM" dialog box.
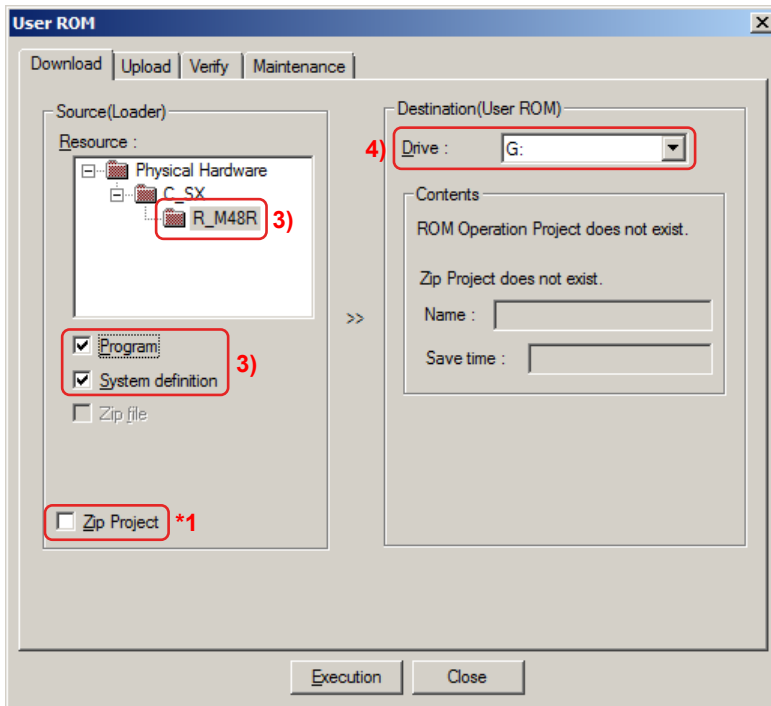
*1 If you check "Zip Project," the source project (the original data before compilation) can be stored in the user ROM.

3) Select a resource that you want to download to the user ROM card in "Resource" of the "Source (Loader)" section. When a resource is selected, the check boxes for "Program" and "System definition" are enabled. Check the both boxes. (When you check "Program," both boxes are automatically checked.)

4) Specify the drive where the user ROM card is connected for "Drive" in the "Destination (User ROM)" section.

5) Click the [Execution] button. The following confirmation dialog box appears. Clicking the [Yes] button starts the download.
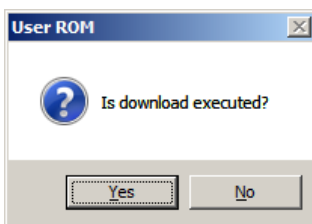
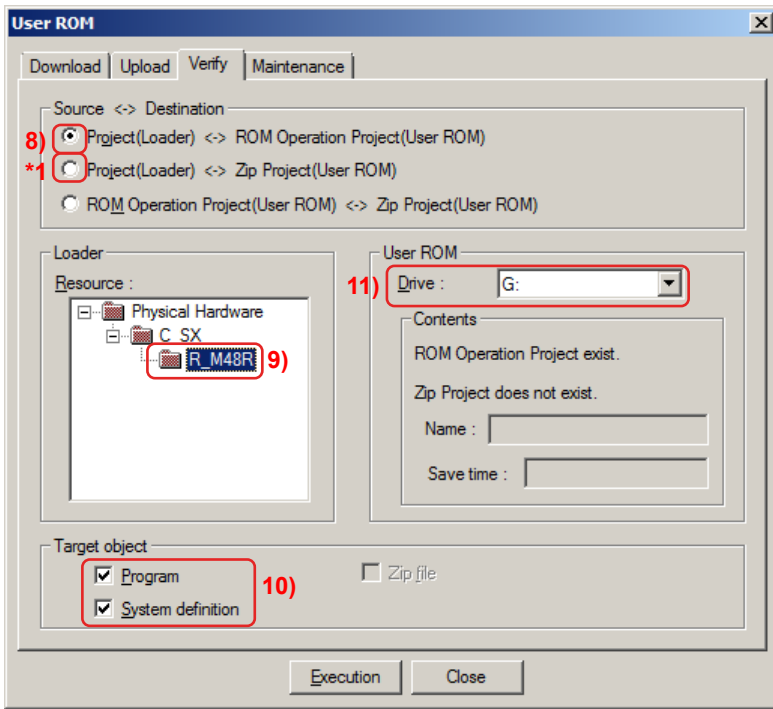

6) When the download is completed, the dialog box appears saying "Download was completed." Click the [OK] button.


* The download may take a few seconds to tens of seconds. Be sure to wait until the above dialog box appears.

7) Next, click the [Verify] tab on the "User ROM" dialog box.

*1 If you select "Project (Loader) <-> Zip Project (User ROM)," the source project in the loader can be verified with the zip project in the user ROM.

8) Select "Project (Loader) <-> ROM Operation Project (User ROM)" for "Source <-> Destination."
9) Select a resource that you want to verify from the "Resource" in the "Loader" section.
10) Check "Program" and "System definition" for "Target object."
11) Specify the drive where the user ROM card is connected for "Drive" in the "User ROM" section.
12) Click the [Execution] button to start verification. When the verification is completed, the dialog box for verification result appears.
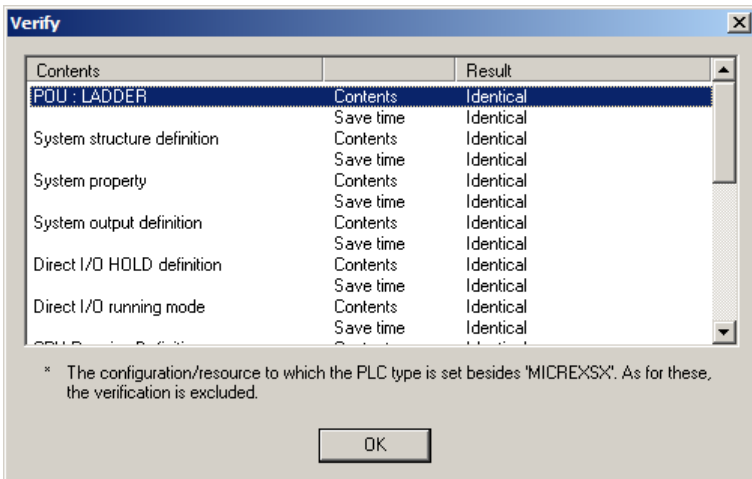

13) Check the verification result, and then click the [OK] button.
    If there are items listed as "different," go back to **Step 2-1 2)** and retry the download.
14) Click the [Close] button to exit the "User ROM" dialog box.
15) Remove the user ROM card from the memory card reader.
    Go on to **Step 3**.

(2) Step 2-2: Downloading a program to the user ROM card inserted in the CPU module from D300winV3

1) Turn off the PLC, and then insert the user ROM card (CF/SD card) into the CPU module.
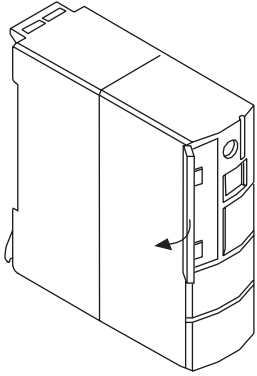
Open the user ROM card connector cover.   Insert the user ROM card into the CPU module.
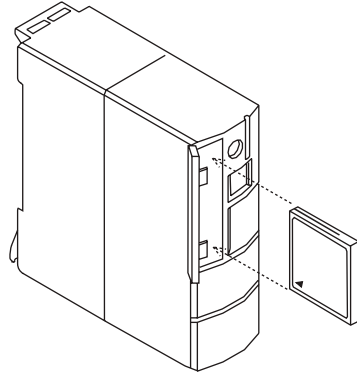
2) Change the key switch of the CPU module to "UROM TERM," and then turn on the PLC.
Check that "UROM" of the status indication LED on the CPU module turns on.


3) Start D300winV3 and open the project of the program that you want to download to the user ROM. Compile the project beforehand.
Click the [Project Control Dialog] button to display the control dialog box.

4) If the CPU is running, click the [Stop] button to stop the CPU.
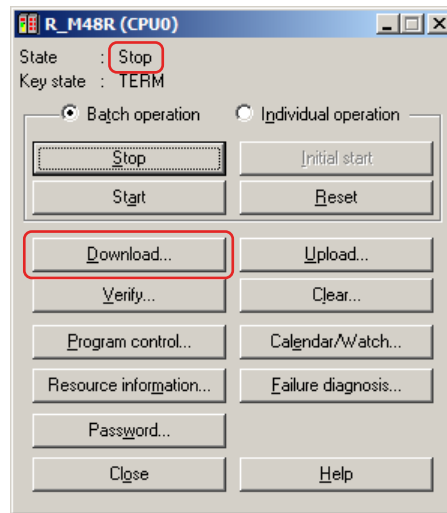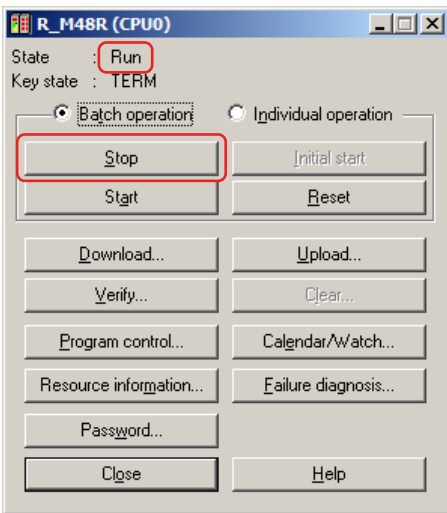
5) Click the [Download] button. The "Download loader -> CPU" dialog box opens.
Check "Program" and System definition," and then click the [OK] button.
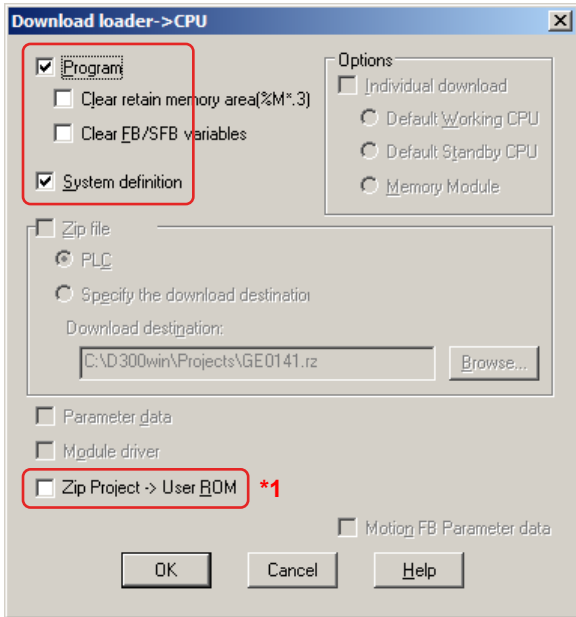
* If you check "Zip Project -> User ROM," the source project (the original data before compilcation) can be stored in the user ROM.

6) The download status is displayed on the task bar at the bottom of the D300win screen. When the download is completed, the dialog box appears saying "Download successful." Click the [OK] button.
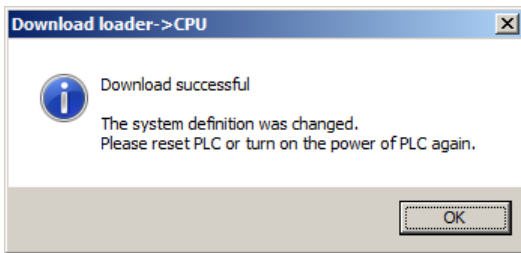
7) Next, click the [Verify] button on the control dialog box. The "Verify" dialog box opens.
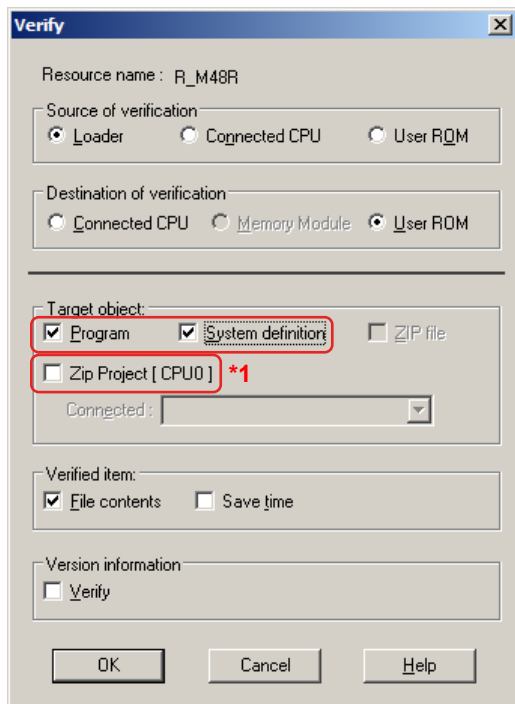
*1 If you check "Zip Project [CPU0]," the file size of the source project is verified with that of the zip project in the user ROM.

8) Check "Program" and "System definition" for "Target object," and then click the [OK] button.
   When the verification is completed, the "Verification result" dialog box appears.

```
Verified result
Verified result:        Memo

POU:LADDER                 : Contents    : identical
System structure definition : Contents    : identical
System property            : Contents    : identical
System output definition   : Contents    : identical
Direct I/O HOLD definition : Contents    : identical
Direct I/O running mode    : Contents    : identical
CPU Running Definition     : Contents    : identical
CPU Memory Size Definition : Contents    : identical
Execution band ratio setting : Contents  : identical
Constant scanning setting  : Contents    : identical
CPU I/O group 1            : Contents    : identical
Direct I/O fail-soft setting : Contents  : identical
System FB information       : Contents    : identical
Task structure(default level) : Contents : identical

                    Close
```
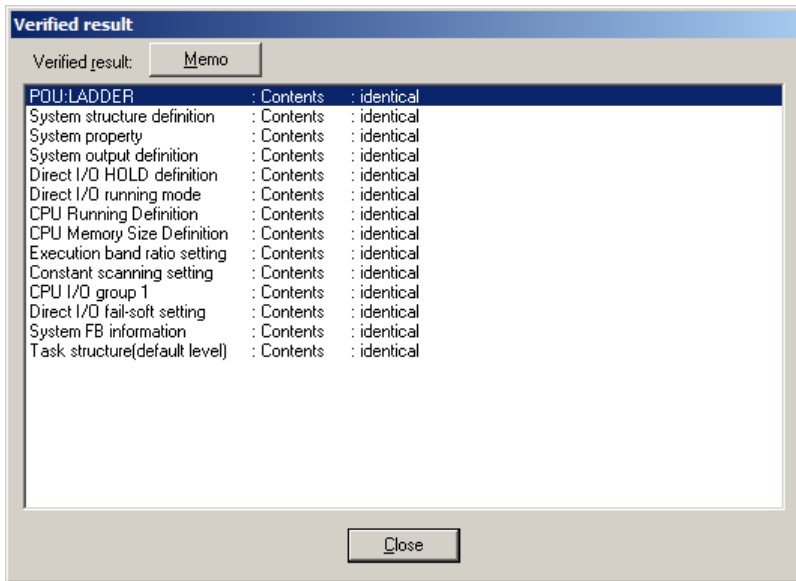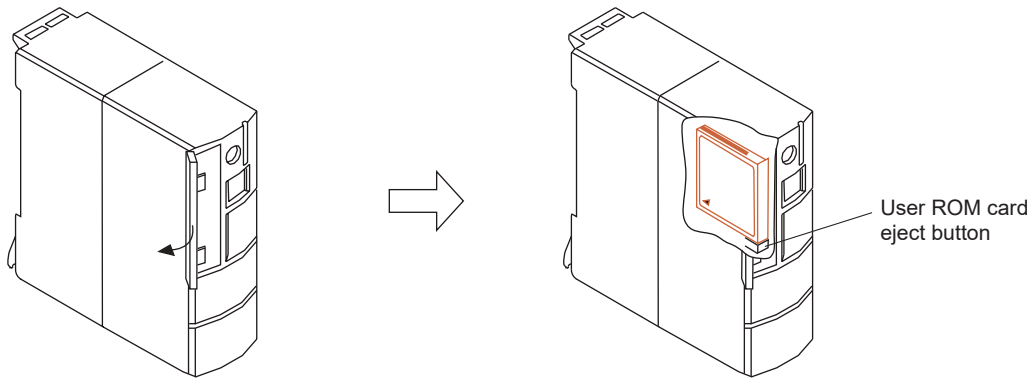
9) Check the verification result, and then click the [Close] button.
   If there are items listed as "different," go back to **Step 2-2 5)** and retry the download.
   Click the [Close] button to exit the control dialog box.

10) Turn off the PLC, and then remove the user ROM card (CF/SD card) from the CPU module.

User ROM card
eject button

Open the user ROM card connector cover.

• CF card
  Press the user ROM card eject button on the CPU module to remove
  the user ROM card.

• SD card
  When removing the card, lightly press the card into the slot to release.
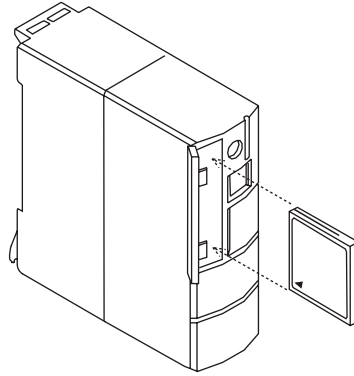 When the card is partially ejected, remove it.

Go on to **Step 3**.

5. Step 3   Downloading the Program from the User ROM Card to the CPU Module

1) Turn off the PLC, and then insert the user ROM card (CF/SD card) into the CPU module.
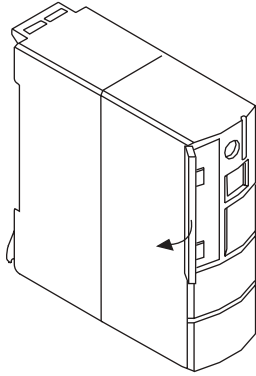
Open the user ROM card connector cover.   Insert the user ROM card into the CPU module.

2) Change the key switch of the CPU module to "UROM TERM."

3) Turn on the PLC.
   Wait until the three status indication LEDs of "ONL," "UROM," and "RUN" on the CPU module turn on.
   Do not move the key switch or turn off the power supply until the CPU starts running.
   If the three LEDs of "ONL," "UROM," and "RUN" do not turn on after a few minutes, turn off the PLC and check the following points.
   1) Check that the key switch is set at "UROM TERM."
   2) Check that the program has been downloaded to the user ROM card.
   3) Check that the program in the user ROM card is the right program for the CPU module.

4) Turn off the PLC, and then remove the user ROM card (CF/SD card) from the CPU module.
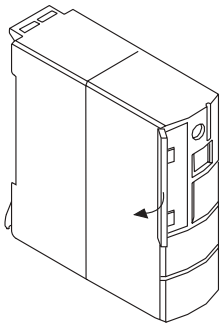
Open the user ROM card connector cover.
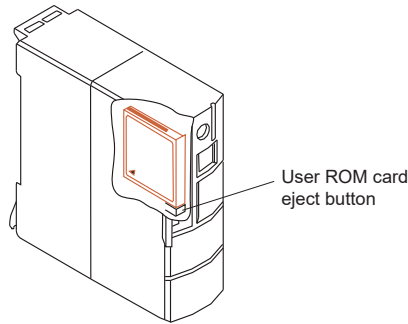
User ROM card
eject button

• CF card
  Press the user ROM card eject button on the CPU module to remove
  the user ROM card.

• SD card
  When removing the card, lightly press the card into the slot to release.
  When the card is partially ejected, remove it.

5) Turn on the PLC and check that the PLC normally operates.

The procedure for downloading a program to a CPU module using a user ROM card is now completed.

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