Multiple Flash Writer
MWuEASE
User's Manual

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Table of Contents

1 Introduction

The Multiple Flash Writer MWuEASE (Hereafter called MWuEASE) is the software tool that can write Hex format user program codes into the Flash memory embedded on nX-U8/100 microcontrollers using on-chip debugging emulator uEASE. The feature of MWuEAS is the following.

-Two or more microcontrollers of the same target can be written in at once.
-Maximum 32 sets of uEASE are controllable.
-In Main Dialog Box in Simple Mode, button operation is simplified for the purpose of supporting mass production.

Fig.1-1 shows the system configuration. For more detail about connection between uEASE and target LSI, see the following manuals.

- uEASE User's manual
- uEASE connection manual

[Notes]
Use USB Hub based on USB standard 2.0 High Speed specification.
Maximum three Hubs can be supported in a communication path between the host and any target device (four tiers including host).

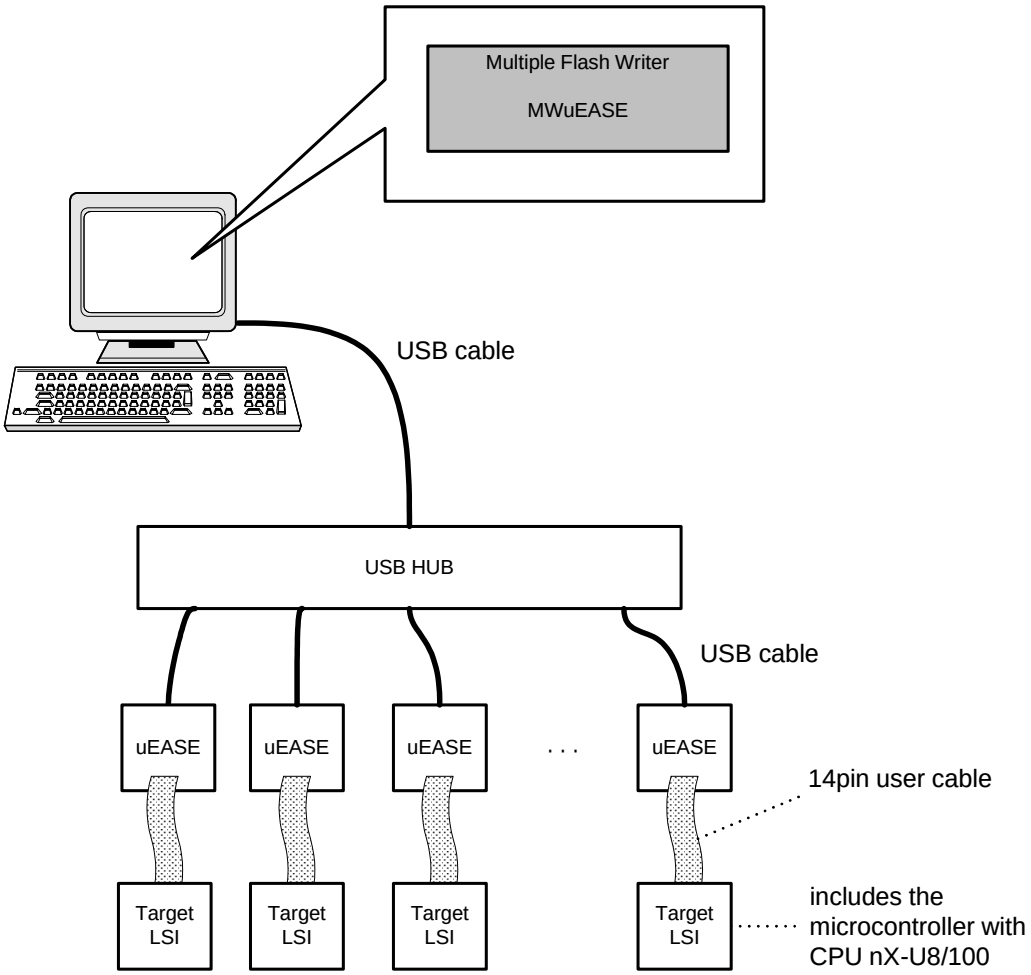


Fig.1-1 Connection with uEASE and Target LSIs

2 Operating Environment

MWuEASE works under the following environment.

Table 2-1 Operating environment of MWuEASE

Item	Description
PC	IBM PC/AT-compatible machine
OS	Windows XP, Windows Vista*, Windows 7* * Please log on with an administrator account.
CPU	Recommendation: Intel Pentium or equivalent processor with a clock speed of 2.4 MHz or higher
Memory	Recommendation:1GB or more
Video Card	Video adapter and color monitor supporting SVGA (1024×768) or higher resolution
Hard Disk	Free disk space of 1GB or more required
Interface	USB2.0 required
Others	Pointing device such as a mouse

[Notes]

Please run MWuEASE on PC after closing other application programs.

3 Main Dialog Box (Operating Screen)

There are two kinds of Main Dialog mode, Detail Mode and Simple Mode. In Dtail Mode, all the setup and operations can be performed on Main Dialog Box. Simple mode is the mode supporting the writing at the time of mass production, and can write to target LSI by pushing on one button.

3.1 Main Dialog Box in Detail Mode

Fig.3-1 shows buttons and function fields on Main Dialog Box of MWuEASE in Detail Mode. See Chapter 5 "Function in Detail Mode" for explanation of each buttons and function fields.

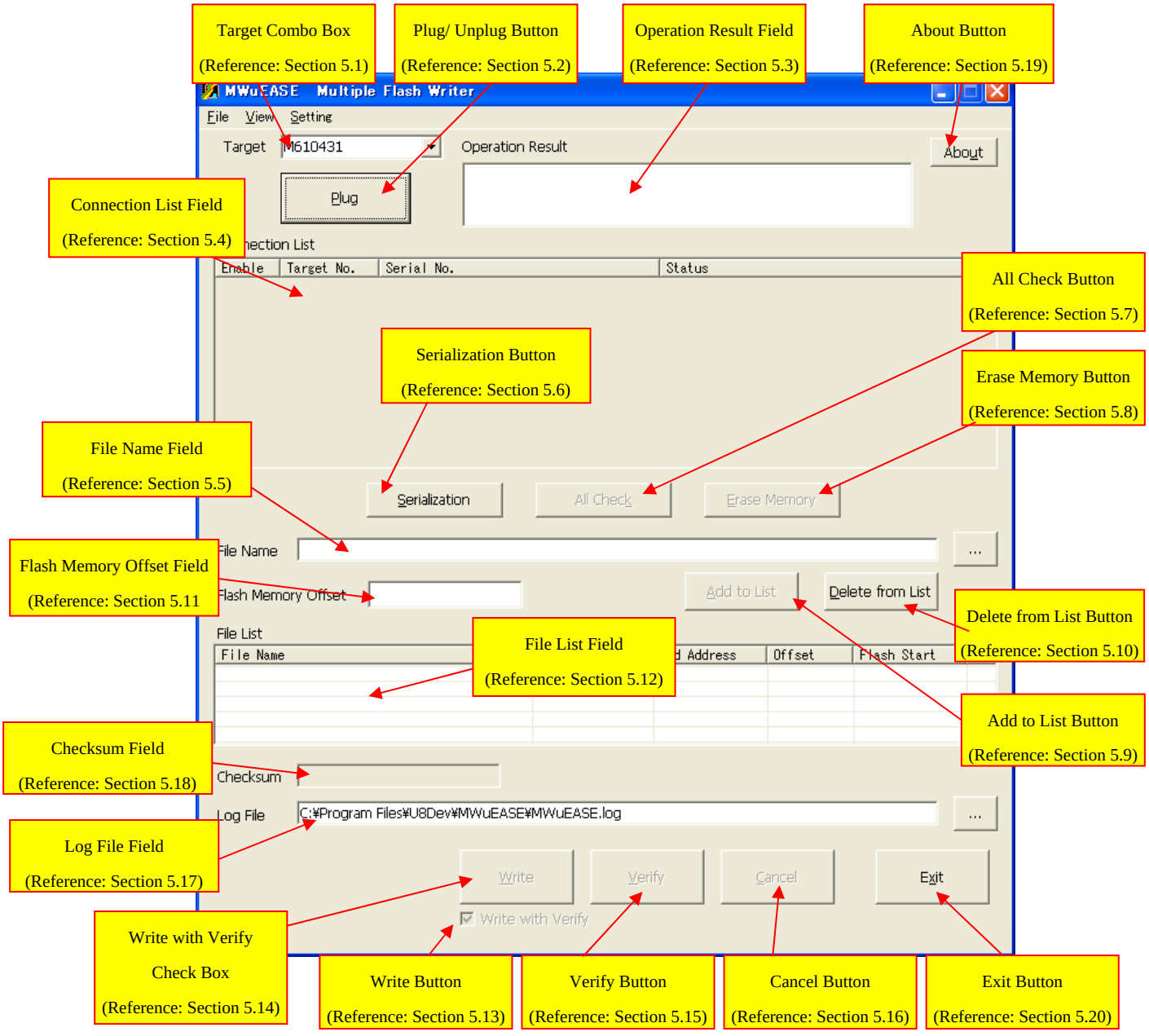


Fig.3-1 Main Dialog Box in Detail Mode

3.2 Main Dialog Box in Simple Mode

Fig.3-2 shows buttons and function fields on Main Dialog Box of MWuEASE in Simple Mode. See Chapter 6 "Function in Simple Mode" for explanation of each buttons and function fields.

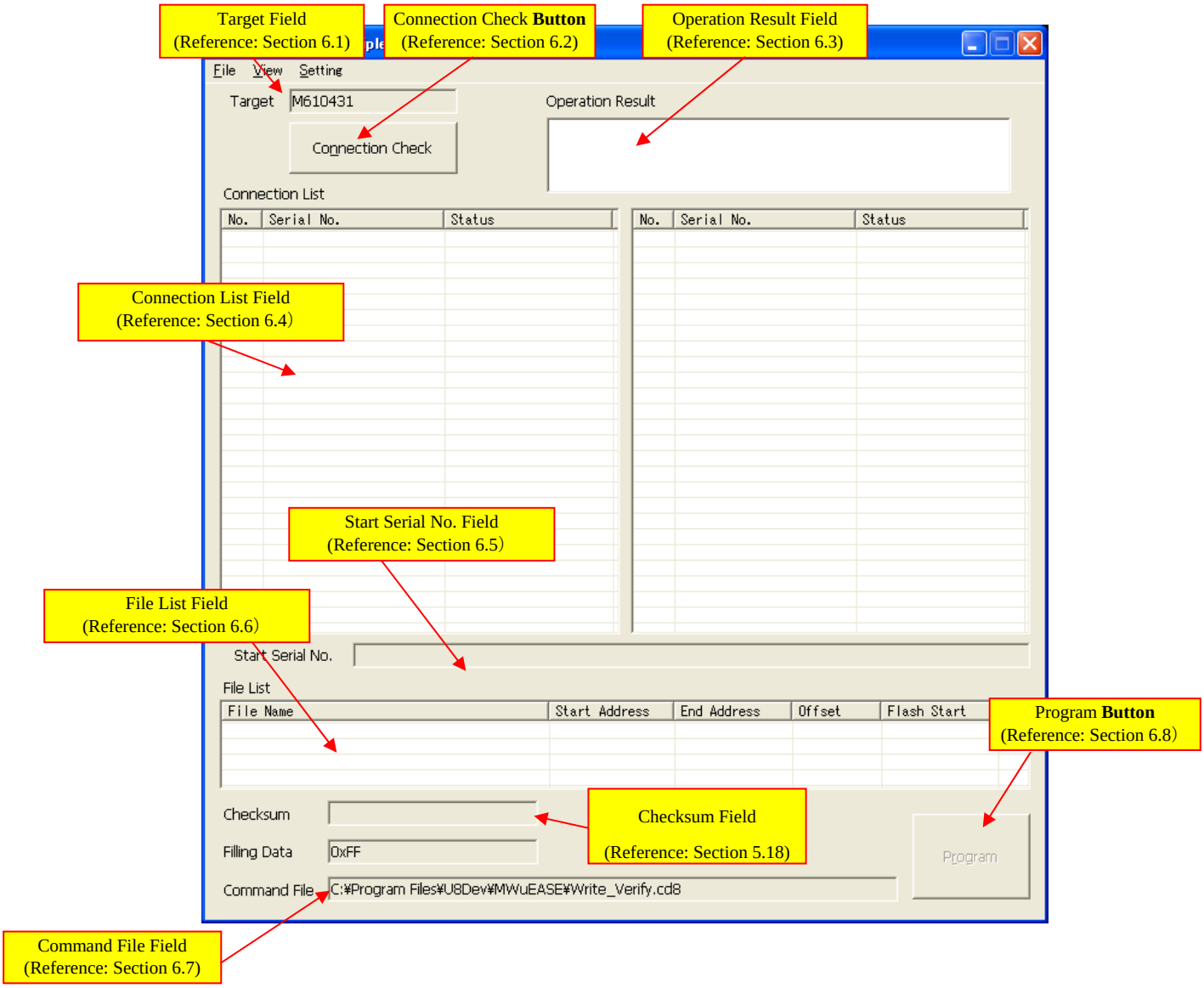


Fig.3-2 Main Dialog Box in Simple Mode

4 Operating Procedure

This chapter explains operating procedure for MWuEASE. Explanation of buttons and function fields on Main Dialog Box of MWuEASE is described in Chapter 5 "Function in Detail Mode" and Chapter 6 "Function in Simple Mode".

Before starting this procedure, please setup the system and make each connection as shown in Fig.1-1.

First of all, select MWuEASE from [start]->[All programs]->[U8 Tools]->[MWuEASE], to run MWuEASE. Main Dialog Box will be shown.

4.1 Operating Procedure in Detail Mode

Fig.4-1 shows Main Dialog Box in Detail Mode.

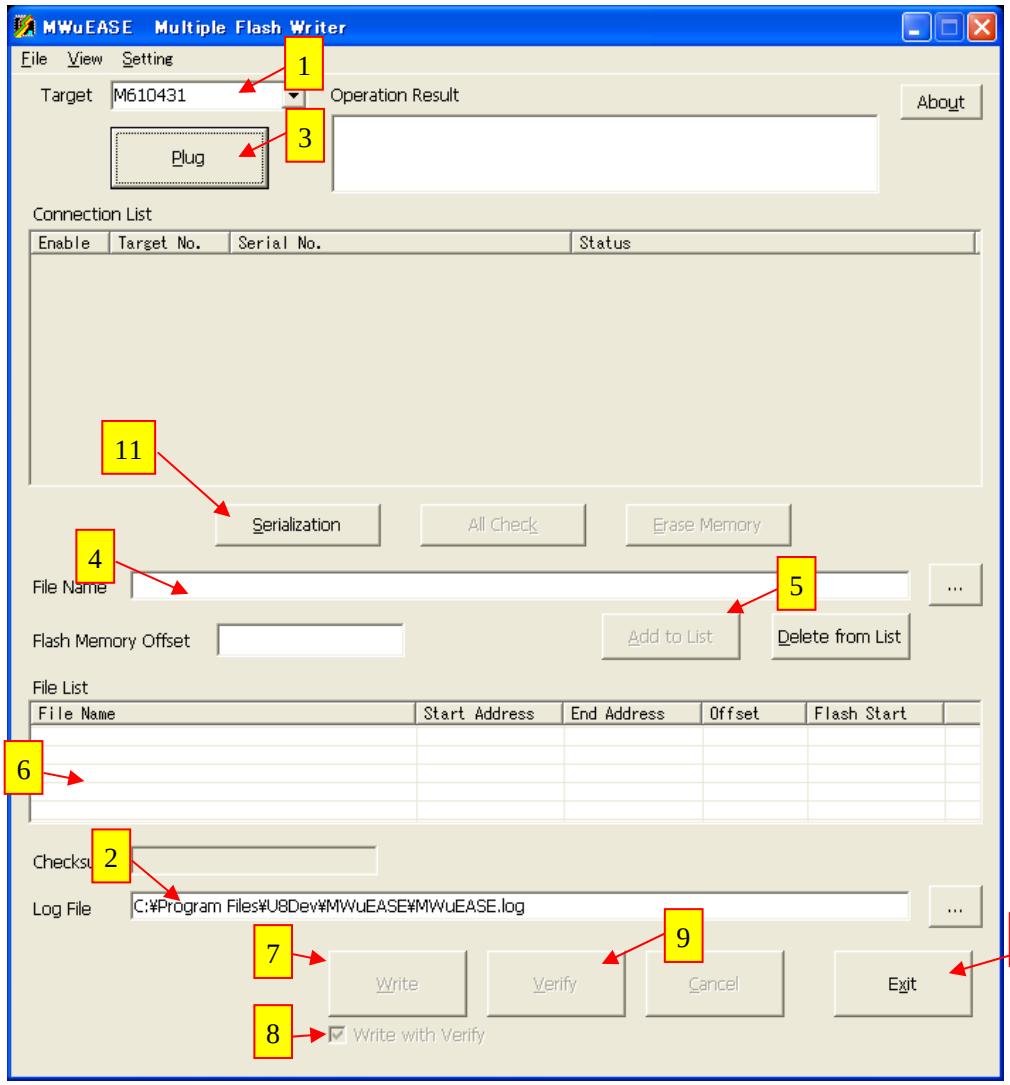


Fig.4-1 Main Dialog Box in Detail Mode

1. Select target LSI which is written by MWuEASE from the pulldown menu of the [Target] combo box (No.1 in Fig.4-1).
2. Specify the [Log File] field (No.2 in Fig.4-1) to record working events of MWuEASE.
3. Push on the [Plug] button (No.3 in Fig.4-1), then uEASE will be plugged into MWuEASE.
4. Specify the [File Name] field (No.4 in Fig.4-1). MWuEASE supports two types of formats, Extended Intel Hex or Motorola S2. After pushing on the [Add to list] button (No.5 in Fig.4-1), the specified file is added to the [File List] field (No.6 in Fig.4-1).

After the above operations, you can select the following operations.

[Write] button (No.7 in Fig.4-1): After erasing Flash memory, write the specified HEX file.

The [Write] operation includes verification which compares the contents of target Flash memory with contents of a volatile memory on uEASE.

[Verify] button (No.9 in Fig.4-1): Compare contents between Flash memory and HEX file.

When the [Write with Verify] check box (No.8 in Fig.4-1) is selected, pushing on the [Write] button will compare the contents of HEX file and the contents of Flash memory automatically after the writing, without pushing on the [Verify] button.

The [Operation Result] field shows the summary of result in writing for all targets. The [Status] of the [Connection List] field shows the result in writing to each target.

Perform the following procedures, if you would like to write in another target LSI.

To replace Target LSIs,

1. Push on the [Unplug] button (No.3 in Fig.4-1) to unplug MWuEASE and uEASE.
2. Disconnect USB cable from USB port of PC.
3. Disconnect the user cable between uEASE and target LSI, and change another target LSI.
4. Connect another target LSI and uEASE with the user cable.
5. Connect USB cable to USB port of PC.
6. Push on the [Plug] button to plug MWuEASE and uEASE.

Push on the [Exit] button (No.10 in Fig.4-1), a confirmation dialog for termination will be popped-up. At this time, push on the [OK] button, MWuEASE will terminate.

4.2 Operating Procedure in Simple Mode

Fig.4-2 shows Main Dialog Box in Simple Mode.

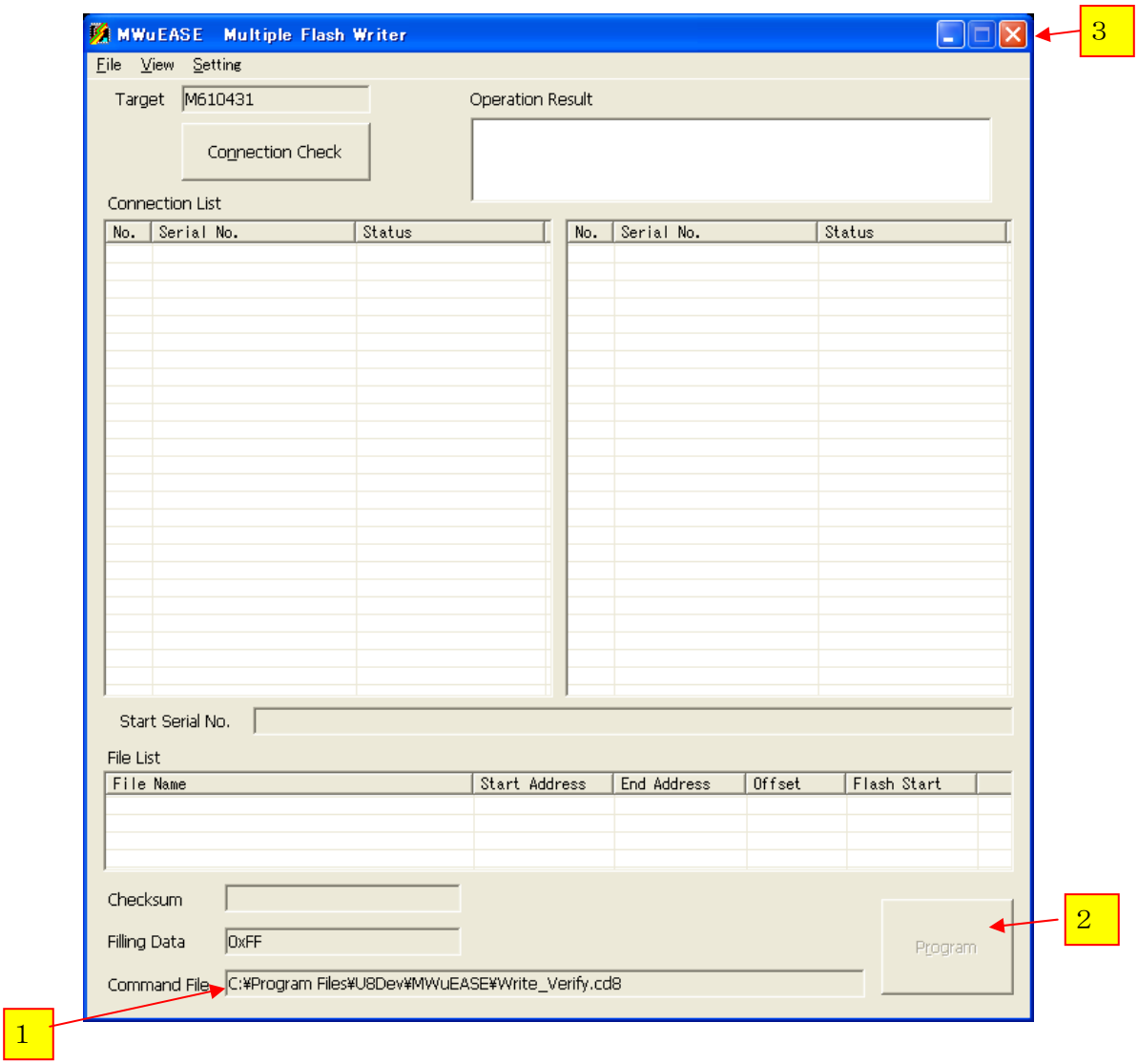


Fig.4-2 Main Dialog Box in Simple Mode

The method of changing from Detail Mode to Simple Mode is the following procedure.

1. Push on the [Unplug] button (No.3 in Fig.4-1) to unplug MWuEASE and uEASE.
2. Select the [Simple Mode] of the [View] menu. Main Dialog Box in Simple Mode will be displayed.

Operation in Simple Mode is only one pushing on the [Program] button (No.2 in Fig.4-2). Then the following processings will be performed.

- Plug processing

  Plugging MWuEASE and uEASE

- Execution of a command file

  The command described by the command file currently displayed on the [Command File] field (No.1 in Fig.4-2) will be executed.

- Unplug processing

  Unplugging MWuEASE and uEASE

Perform the following procedures, if you would like to write in another target LSI.

To replace Target LSIs,

1. Disconnect USB cable from USB port of PC.
2. Disconnect the user cable between uEASE and target LSI, and change another target LSI.
3. Connect another target LSI and uEASE with the user cable.
4. Connect USB cable to USB port of PC.

Push on the [Exit] button (No.3 in Fig.4-2), a confirmation dialog for termination will be popped-up. At this time, push on the [OK] button, MWuEASE will terminate.

4.3 Operating Procedure with Serialization after Starting

MWuEASE can write the specified HEX file and serial numbers incremented automatically to target LSIs. Please try the following procedure.

1. Select target LSI which is written by MWuEASE from the pulldown menu of the [Target] combo box (No.1 in Fig.4-1).
2. Specify the [Log File] field (No.2 in Fig.4-1) to record working events of MWuEASE.
3. Push on the [Plug] button (No.3 in Fig 4-1), then MWuEASE will be pulugged into uEASE
4. Push on the [Serialization] button (No.11 in Fig.4-1), then MWuEASE displays a dialog shown as Fig.4-2-1. Select your configuration then push on the [OK] button.

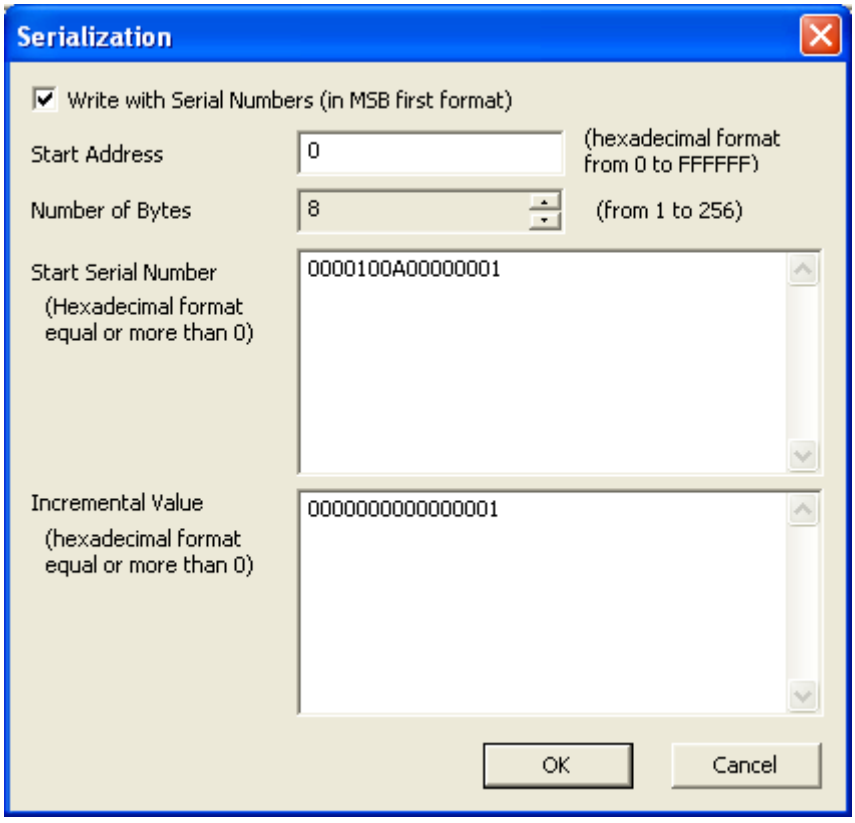


Fig.4-2-1 Serialization Dialog

[Write with Serial Numbers]	Tick the checkbox. (Enable Serialization)
[Start Address]	Type a Flash memory address which serial numbers are written. (e.g.8000H)
[Number of Bytes]	Select a length of serial numbers. (e.g.32)
[Start Serial Number]	Type an initial value of serial numbers. (e.g.1)

[Incremental Value] Type an incremental value for serial numbers. (e.g.1)

Push on the [OK] button, and then the [Connection List] field displays each serial number. If 32 uEASEs are plugged, serial numbers are assigned to target LSIs from 1 to 32.

5. Specify the [File Name] field. MWuEASE supports two types of formats, Extended Intel Hex or Motorola S2. (No.4 in Fig.4-1) After pushing on the [Add to list] button (No.5), the specified file is added to the [File List] (No.6)
6. Make sure that the caption of the [Write] button shows the [Write with Serial No.].
   Push on the [Write] button (No.7). After erasing Flash memory, MWuEASE writes the specified HEX file, and write serial numbers to the address from 8000H to 8003H at the same time.

If you'd like to continue to write a next target LSIs set, change target LSIs according to the previous section "To replace target LSIs". After that push on the [Plug] button, and serial numbers are assigned to target LSIs from 33 to 64.

5 Function in Detail Mode

This chapter describes buttons and function fields on Main Dialog Box in Detail Mode.

5.1 Target Combo Box

The [Target] Combo Box displays one type of microcontroller selected by the pull down list.

5.2 Plug/Unplug Button

The [Plug/Unplug] button controls the connection / disconnection between MWuEASE and uEASE. In the Plug state, the caption of this button shows the [Unplug]. In the Unplug state, the caption of this button shows the [Plug].

When MWuEASE is in the Plug state, status of connection is shown in the [Connection List] field, and then MWuEASE is ready for the [Write process] / [Verify process] / [Erase Memory process].

If something an error happens in Plug process, it is indicated in the [Operation Result] field and the [Status] of the [Connection List] field, and then the POWER LED (Green) on uEASE will be blinking.

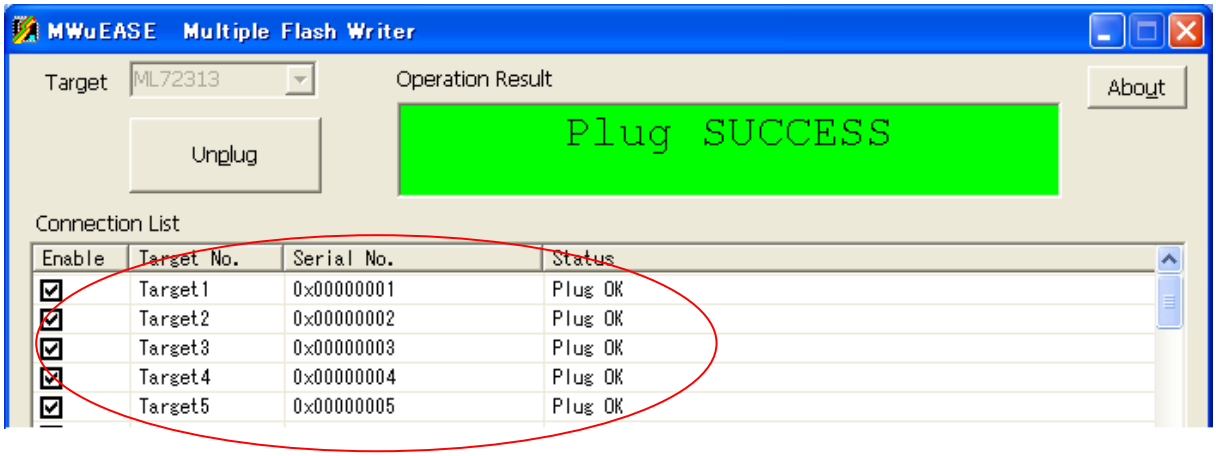


Fig.5-2-1 Plug condition

When Serialization is enabled, the [Connection List] field displays each serial number.

Serial numbers has overflowed when they excess a value permitted by the [Serialization] dialog. When serial numbers has overflowed, a warning message as Fig.5-2-2 will be popped-up. Pushing on the [Cancel] button on warning message unplugs all target LSIs. Subtract the number of target LSIs showed in the message, and push on the [Plug] button. Pushing on the [OK] button on warning message button opens the [Serialization] dialog (See Fig.5-6) which can be arranged the configuration.

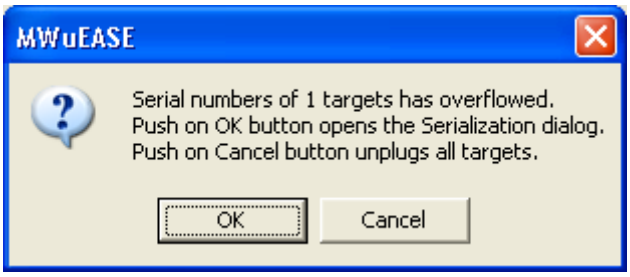


Fig.5-2-2 Warning message against the serial numbers overflowed

5.3 Operation Result Field

The [Operation Result] field displays the result of execution for the [Plug process] / [Unplug process] / [Write process], [Verify process] / [Erase Memory process]. The result of execution is shown by three messages, and it will remain until the next process start.

- SUCCESS

This message is displayed under the below condition.

- The [Enable] check boxes of all connected targets in the [Connection List] field are selected.

- The process has done with no error.

In this case, message format is 'process name + SUUCESS', and the background color is green.

- Partial SUCCESS

This message is displayed under the below condition.

- There is any target of which the [Enable] check box in the [Connection List] field is not selected.
- The process on the targets of which the [Enable] check boxes are ticked has done with no error.

In this case, the message format is 'process name + Partial SUUCESS', and the background color is yellow.

- FAILURE

This message is displayed if there is error(s) in the process. The message format is 'process name + FAILURE', and the background color is red.

5.4 Connection List Field

The [connection List] field displays the information of connected target. The detailed description of each column is as follows:

[Enable] column

There are check boxes to select process execution for connected target LSIs. The [Write process], [Verify process] and [Erase Memory process] will be executed for target LSIs of which the check boxes are ticked.

[Target No.] column

The [Target No] means the number which MWuEASE identify the connected uEASE. And the format of this number is "target"+number.

[Serial No.] column

Serial number assigned to the connected target LSI except one failed to process the [Plug] when Serialization is enabled.

[Status] column

Display status of current process, or result of executed process.

While processing the [Write] / [Verify] / [Erase Memory], the [Status] field displays the process type. The [Status] field is updated at every process termination of checked target uEASE. If any error occurs on a target, the color of target line becomes red.

While processing the [Plug], if any error occurs on a target, MWuEASE turn the [Enable] check box off automatically, and change the color of target line to gray. Then, the operation of the [Enable] check box for target will be prohibited.

During the Plug state, if you right-push on on the target line, you can select the below action in the pop-up menu.

-Save Memory : Read the data from the target Flash memory and save the data to a file (Intel HEX format), except target LSI which the [Status] shows an error or the [Enable] check box is turned off.

-Properties : Display additional information of the target (connection number, uEASE firmware version number, USB device path).

5.5 File Name Field

The [File Name] field specifies the HEX file. After pushing on the […] button located next to the [File Name] field, the file dialog is displayed, and selects the HEX file.

The selectable HEX file for MWuEASE is the extended Intel HEX format or Motorola S2 format.

5.6 Serialization Button

The [Serialization] button is used to set up the serialization. Pushing on this button opens a dialog to setup shown as Fig.5-6.

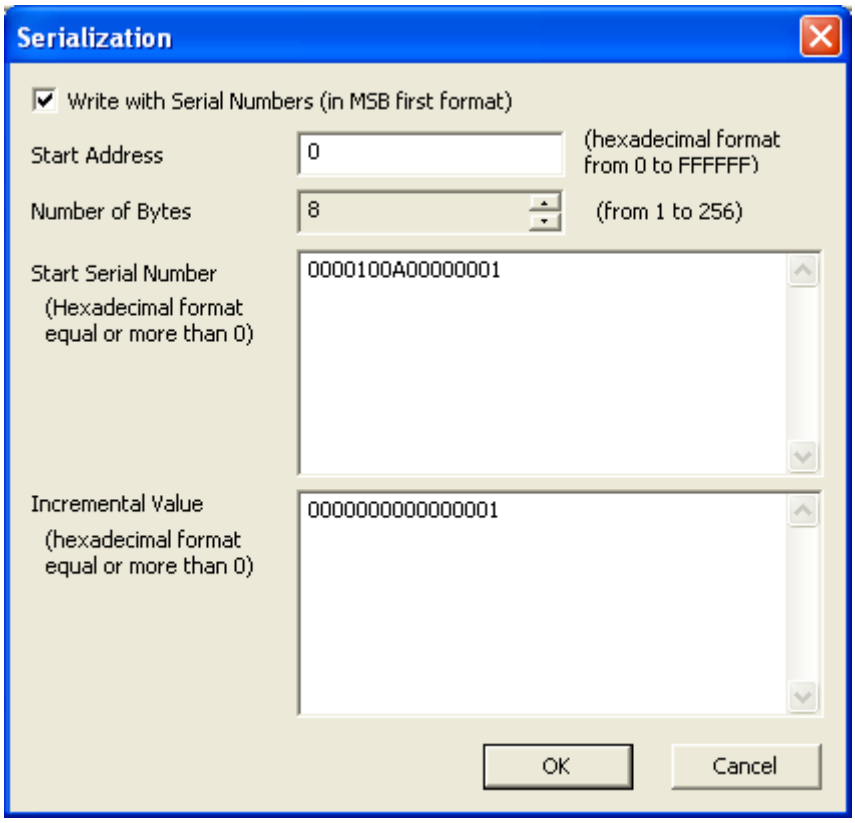


Fig.5-6 Serialization Dialog

[Write with Serial Numbers]	Enable/Disable Serialization (default value is "disable")
[Start Address]	Flash memory address which serial numbers are written
[Number of Bytes]	Length of serial numbers
[Start Serial Number]	Initial value of serial numbers
[Incremental Value]	Incremental value for serial numbers

This configuration is kept after exit of MWuEASE. Next time to start MWuEASE and push on the [Plug] button, this configuration is restored. When serial numbers are overflowed, then MWuEASE displays the warning message shown as Fig.5-2-3. Pushing on the [OK] button opens the [Serialization] dialog again. Pushing on the [Cancel] button on warning message unplugs all target LSIs and saves the latest configuration which doesn't cause overflow.

5.7 All Check Button

The [All Check] button ticks or unticks the all check boxes of connected targets in the [Enable] of the [Connection List] field.

5.8 Erase Memory Button

The [Erase Memory] button erases the contents of all area on the target Flash memory selected in the [Enable] of the [Connection List] field.

5.9 Add to List Button

The [Add to List] button determines the HEX file which is specified in [File Name] field. After pushing on the button, it will add the HEX file into the [File List] feild.

MWuEASE can entry several HEX files and write it collectively.

MWuEASE decides the writing range by adding the range between start address and end address in HEX file to the specified offset value in the [Flash Memory Offset] field. If MWuEASE detects an overlapped address, issues the error message.

If the input HEX file includes the data which is located on non writable test data area or an area which flash memory does not existing, a warning message as Fig.5-9 will be popped-up. Please confirm if the input HEX file was generated for your target microcontroller.

Fig.5-9 Warning message against the HEX file which includes non writable test data area

This warning is always issued against the HEX file which was generated by HTU8 hex convert tool. It is because HTU8 always generated HEX file that fills non writable test data area. To add such HEX file in the [File List] field, push on the [OK] button in the warning message dialog. And then the HEX file is added in the [File List] field.

The data which is located on non writable test data area or an area which flash memory does not existing is ignored when writing into Flash memory.

5.10 Delete from List Button

The [Delete from List] button deletes the HEX file which is registered in the [File List] field. To delete the HEX file, select the HEX file in the [File List] field, and push on the [Delete from List] button.

5.11 Flash Memory Offset Field

The [Flash Memory Offset] field specifies the offset value between the address of HEX file and actual address of Flash memory.

For example, if the offset value is '1000H', MWuEASE writes the data of 100H in HEX file to 1100H in Flash memory.

If the [Flash Memory Offset] field omits, MWuEASE interprets the offset value as '0H'.

In fact, MWuEASE writes the data using original address in HEX file)

5.12 File List Field

The [File List] field displays the information for the HEX which is fixed by [ADD to List] button. The detailed description of each column is as follows:

[File name] column

This displays the file name which is inputted in the [FileName] field.

[Start Address] column

This displays the start address by left justify 5 columns.

[End address] column

This displays the end address by left justify 5 columns.

[Offset] column

This displays the offset value which is inputted in the [Flash memory offset] field by left justify 5 columns. When the offset value is not '00000H', display '+' or '-'on the head of offset value. And if the offset value is not specified or '00000H', display '00000H'.

[Flash Start] column

This displays the writing start address by left justify 5 columns.

5.13 Write Button

The [Write] button writes the data of the HEX file listed in the [File List] to the enabled target LSI in the [Connection List] field. MWuEASE writes 0xFF data to the address where no data exists in HEX file. Before writing, the erase memory process is executed.

When Serialization is enabled, MWuEASE also writes serial numbers. When serial numbers overlap with HEX file, a warning message as Fig.5-13 will be popped-up. Pushing on the [OK] button continues to write. Serial numbers are overwritten on overlapped area.

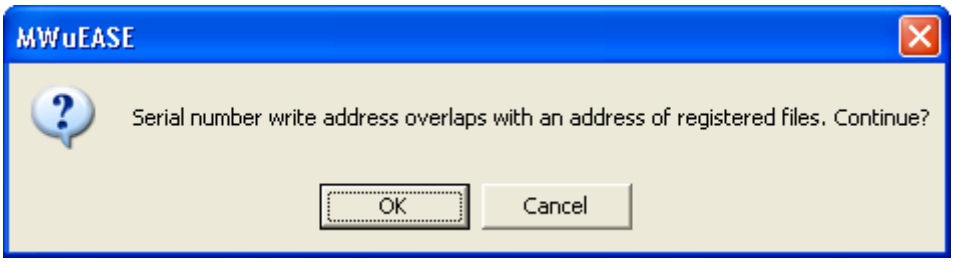


Fig.5-13 Warning message against the overlap between HEX file and serial numbers

The result of writing is displayed in the [Operation Result] field and the [Status] of the [Connection List] field.

5.14 Write with Verify Check Box

The [Write with Verify] button specifies to perform the comparison of contents after the data writing.

If the case of the [Write with Verify] check box is selected, after pushing on the [Write] button, MWuEASE compares the contents of Flash memory with the contents of HEX file automatically after writing, without pushing on the [Verify] button.

5.15 Verify Button

The [Verify] button compares the contents of Flash memory of target LSIs enabled (plugged-in) in the [Connection List] field with the data of HEX file which is listed up in the [File List].

When Serialization is enabled, if only serial numbers overlap with HEX file, MWuEASE compares serial numbers, too. MWuEASE doesn't compare serial numbers if serial numbers don't overlap with HEX file.

The result of verification will be displayed in the [Operation Result] field and the [Status] of the [Connection List] field.

5.16 Cancel Button

The [cancel] button stops the writing process started by pushing on the [Write] button or the comparison process started by pushing on the [Verify] button. If MWuEASE accept the cancel request, a confirmation dialog as Fig.5-16 will be popped-up. MWuEASE will stop the process by pushing on the [OK] button.

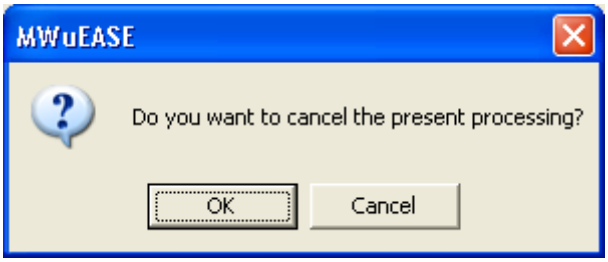


Fig.5-16 Confirmation dialog to cancel

After pushing on the [OK] button, actual interruption timing of process is as follows:

- Writing: After the writing of current block of the Flash memory has done.
- Compare: After the comparison of current target file has done.

5.17 Log File Field

The [Log File] field specifies the file name to record the behavior log of MWuEASE. After pushing on the [...] button located next to the [Log File] field, a file dialog is displayed, and then an existing log file will be selectable.

The log file has the following format:

- During the Plug process

Plug YYYY/MM/DD hh:mm:ss
Number of Target : <NN>
Target <n>: Error : <XXXX> // when some error occurs, error code is printed.
< Error message > // And error message is printed.

Target <n>: Plug OK // When no error is detected, only print Plug OK.
USB Device Path : <device path> // For the additional information,
// USB device path of uEASE is printed.
// (only when Plug processing)

- During the UnPlug process

Unplug YYYY/MM/DD hh:mm:ss
Number of Target : <NN>
Target <n>: Error : <XXXX> // When some error occurs, error code is printed.
< Error message > // And error message is printed.

Target <n>: Unplug OK // When no error is detected, only print Unplug OK.

- During the Erase Memory process

Erase YYYY/MM/DD hh:mm:ss

Number of Target : <NN>

Target <n>: Error : <XXXX> // When some error occurs, error code is printed.

  < Error message > // And error message is printed.

Target <n>: Erase OK // When no error is detected, only print Erase OK.

- During the Write process

Write YYYY/MM/DD hh:mm:ss

Number of Target : <NN>

<File Name>

<Flash Memory Offset>

<Checksum>

Target <n>: Error : <XXXX> // When some error occurs, error code is printed.

  < Error message > // And error message is printed.

  Serial No.: <serial number> missing //When Serialization is enabled.

Target <n>: Write OK // When no error is detected, only print Write OK.

  Serial No.: <serial number> //When Serialization is enabled.

- During the Verify process

Verify YYYY/MM/DD hh:mm:ss

Number of Target : <NN>

<File Name>

<Flash Memory Offset>

<Checksum>

// When differences are detected, the information are printed below.

Address File Flash

// The data which is different between the file and Flash memory is printed here.

Target <n>: Error : <XXXX>

  < Error message >

Target <n>: Verify OK // When no difference is detected, only print Verify OK.

5.18 Checksum Field

The [Checksum] field specifies the the check sum value which digit is 10 digits. When less than 10 digits, "0" is added to the high order side.

The checksum is calculated from the value which filled all the areas of the flash memory except a non writable test area by the contents of a file or 0xFF. Then, if The data of a non writable test area is contained in the files, the value which filled the non writable test area by 0xFF is added.

And it is calculated with the value before storing a serial number.

5.19 About Button

After pushing on the [About] button, MWuEASE version dialog as Fig.5-19 will be popped-up.

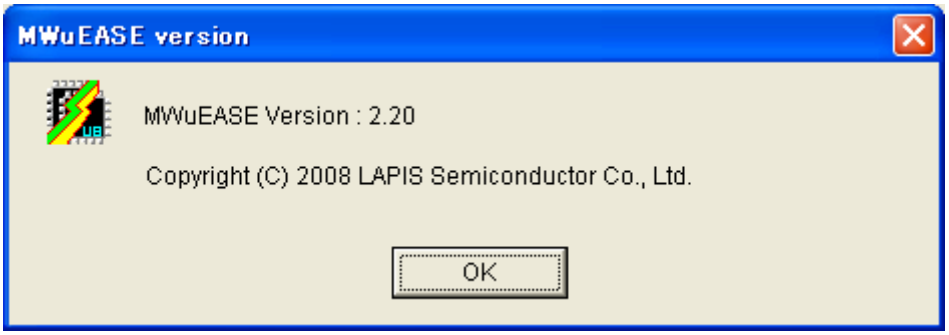


Fig.5-19 MWuEASE version dialog box

5.20 Exit Button

After pushing on the [Exit] button, a confirmation dialog as Fig.5-20 will be popped-up. The MWuEASE will be terminated by pushing on the [OK] button.

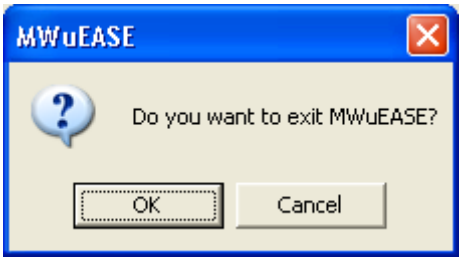


Fig.5-20 Confirmation dialog to exit

6 Function in Simple Mode

This chapter describes buttons and function fields on Main Dialog Box in Simple Mode.

6.1 Target Field

The [Target] Field displays a target microcontroller which can write. When changing target LSI, it changes in the [Select Target] dialog from the [Target.] on the [Setting] menu. About the [Select Target] dialog, see Section 7.3.1 "Target Menu".

6.2 Connection Check Button

Pushing on [Connection Check] button checks the connection between MWuEASE and uEASE.

6.3 Operation Result Field

The [Operation Result] field displays the result of execution of commands defined in the [Command File] field. The result of execution is shown by two messages. It will remain until the next process is started.

- SUCCESS

This message is displayed under the below condition.

- All check box of connected uEASE is set to ON.

- The process has done without an error.

In this case, message format is 'process name + SUUCESS', and the background color is green.

- FAILURE

This message is displayed if there is an error in the process. The message format is 'process name + FAILURE', and the background color is red.

6.4 Connection List Field

The [connection List] field displays the information of connected target. In double-pushing on the line of uEASE, green LED of uEASE blinks for 5 seconds. The detailed description of each column is as follows:

[No.] column

The [No] means the number which MWuEASE identify the connected uEASE.

[Serial No.] column

When a serial number write-in function is effective, the serial number assigned to the connected target is displayed. However, it is not assigned to the target which became an error as a result of

[Plug] processing.. A lower 16 figure value is displayed as a serial number.

[Status] column

The state of the present processing or the result of the performed processing is displayed. While processing the [Plug]/ [Write]/ [Verify]/ [Erase Memory], [Status] field displays the process type (Plug / Writing / Verifying / Erasing Memory).

The [Status] field is updated at the [Write]/ [Verify]/ [Erase Memory] process termination of checked target uEASE. If an error occurs on a target, the color of target line becomes red.

While processing the [Plug], if an error occurs on a target, the color of target line to gray.

6.5 Start Serial No. Field

The [Start Serial No.] field displays the start number of the serial number written in the next, when serial number writing is valid. It is not displayed when serial number writing is invalid.

6.6 File List Field

The [File List] field displays the information for the HEX. The detailed description of each column is as follows:

[File name] column

The file name of the HEX file for processing is displayed.

[Start Address] column

The start address by left justify 5 columns is displayed.

[End address] column

The end address by left justify 5 columns is displayed.

[Offset] column

The offset value by left justify 5 columns is displayed.

When the offset value is not 00000H, '+' or '-'is displayed on the head of offset value. And if the offset value is not specified or 00000H, '00000H' is displayed.

[Flash Start] column

The writing start address by left justify 5 columns is displayed.

Addition to [File List] of a file or deletion of a file from [File List] is performed on the [Add/Delete Hex/S File] dialog ([File] menu -> [Add/Delete Program File--] -> [Add/Delete Hex/S File]).

Explanation of the [Add/Delete Hex/S File] dialog is described on 7.1.1.Add/Delete Program Menu.

6.7 Command File Field

The [Command File] field displays the command file performed when pushing on the [Program] button.

The command file is a text file which put the command in order. The command which can be described to a command file is as follows. The command can use both a capital letter/small letter.

Command Name	Explanation
Write	By using this command, write the data of HEX file into the Flash memory on target LSI. This function is the same as [Write] button in Detail Mode except for Verify operation.
Verify	By using this command, verify equivalence of two data between HEX file and the Flash memory on target LSI. This function is the same as [Verify] button in Detail Mode.
Erase	By using this command, erase the Flash memory on target LSI. This function is the same as [Erase Memory] button in Detail Mode.

The command file can be set from the [Set Command File ...] of the [file] menu. At default, Write_Verify.cd8 in the folder in which MWuEASE exe file is installed is chosen. Write command and Verify command are written in Write_Verify.cd8.

6.8 Program Button

The [Program] button executes commands in the command file which displayed on the [Command File] field. The following processings are performed by pushing on the [Program] button.

- Plug processing

  MWuEASE and uEASE are pluged.

- Execution of a command file

  Commands in the command file which displayed on the [Command File] field are executed.

- Unplug processing

  MWuEASE and uEASE are unplugged.

7 Menu

The menu of MWuEASE is shown below.

Main Menu	Sub Menu	Explanation
File	Add/Delete Program File	File addition / deletion
	Set Command File	Setting of Command file
	Exit	Termination of MWuEASE
View	Detail Mode	Detail Mode dialog box
	Simple Mode	Simple Mode dialog box
Setting	Target	Setting of target LSI
	Serialization	Setting of Serial number writing function

The details of each menu are explained below.

7.1 File Menu

7.1.1 Add/Delete Program File Menu

Selecting the [Add/Delete Program File--] of the [File] menu displays the [Add/Delete Hex/S File] dialog of Fig.7-1. At the [Add/Delete Hex/S File] dialog, file(s) of [File List] field can add or delete.

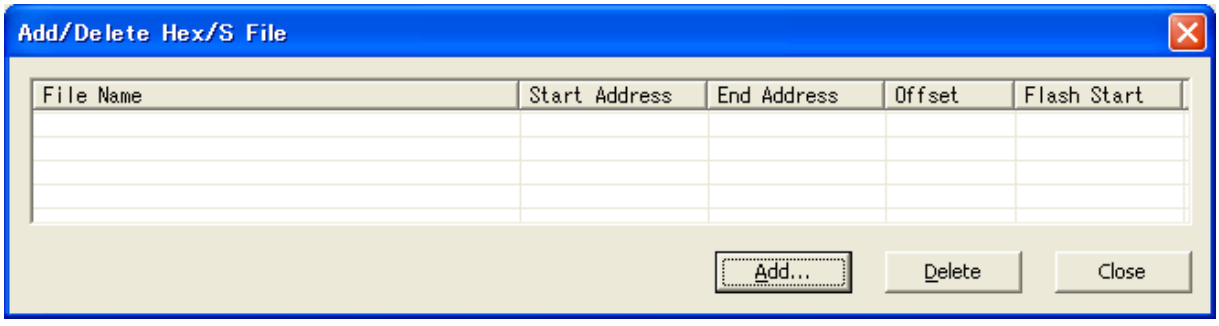


Fig.7-1 Add/Delete Hex/S File dialog

[Add…] Button

Pushing on the [Add…] Button displays the [Add Hex/S File] dialog of Fig.7-2.

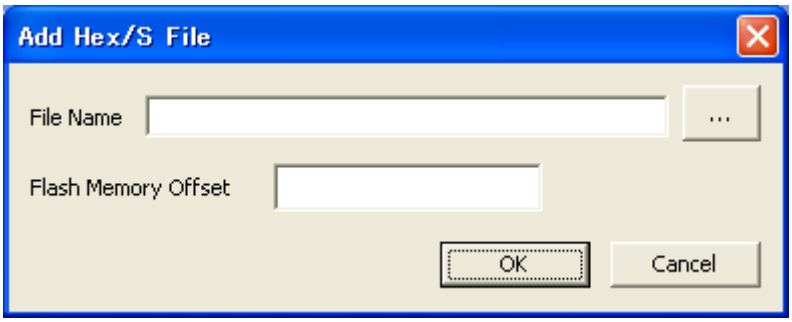


Fig.7-2 Add Hex/S File dialog

The [File Name] field specifies the HEX file name for writing in a Flash memory. Pushing on the [File Name] beside the field displays the file dialog and a HEX file can be chosen.

The HEX file which can be used by MWuEASE is Extended Intel HEX format or Motorola S2 format.

The [Flash Memory Offset] field sets up the offset to the physical address of Flash memory to the logical address of HEX file. For example, when "1000 H" is specified as offset, address 100H data in HEX file is written in adress 1100H on a Flash. When the [Flash Memory Offset] field is omitted, "0 H" (the logical address of HEX file and the physical address of Flash memory are equivalent) is setup.

[Delete] Button

The selected HEX file is deleted from the [File List] field.

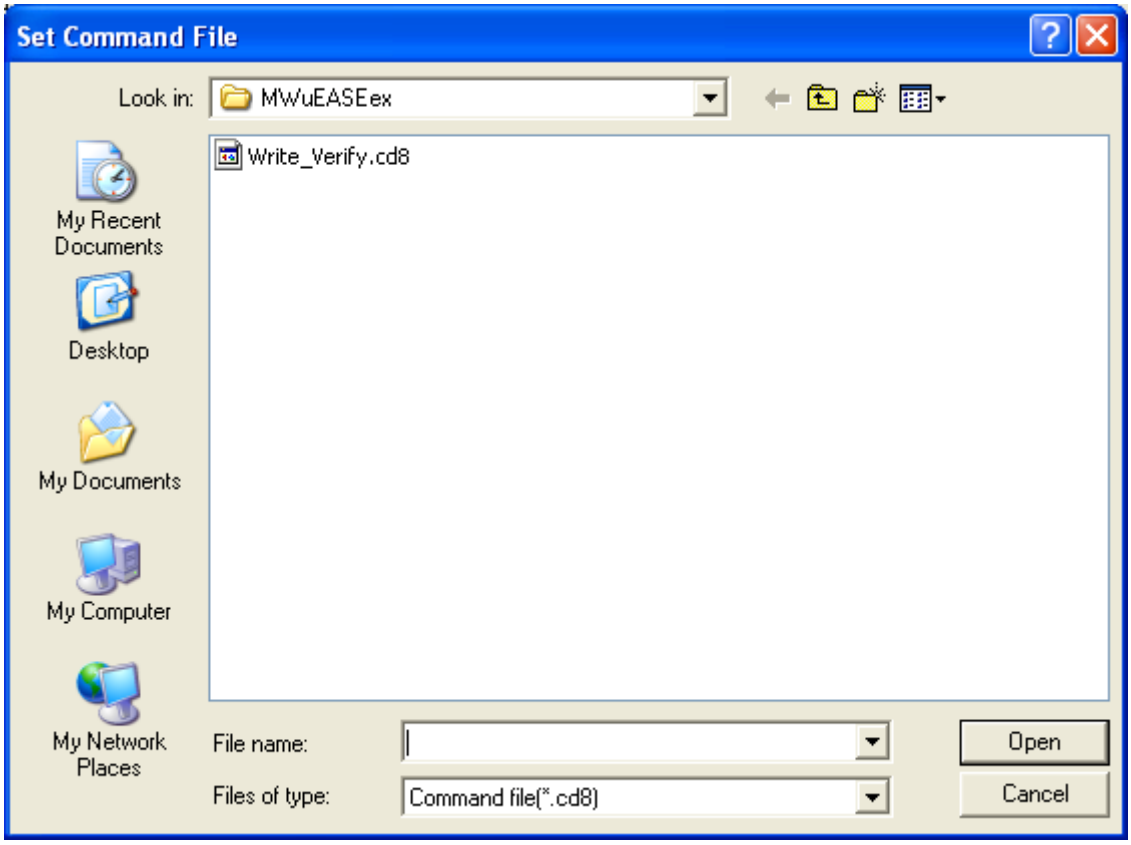
[Close] Button

The [Add/Delete Hex/S File] dialog is closed.

7.1.2 Set Command File… Menu

Selecting the [Set Command…] of the [File] menu displays the [Set Command File] dialog. This dialog can use in Simple Mode. In Detail Mode, it becomes a gray display and cannot choose.

In the [Set Command File] dialog, the command file performed when the [Program] button is pushed is chosen.



If the [Open] button is pushed after choosing a file in the [Set Command File] dialog, the selected command file will be displayed on the [Command File] field.

7.1.3 Exit Menu

MWuEASE can terminate.

The confirmation dialog will be displayed. Then push on the [OK] button.

7.2 View Menu

7.2.1 Detail Mode Menu

The display of main dialog is changed to Detail Mode. The [Detail Mode] is checked in this mode.

7.2.2 Simple Mode Menu

The display of main dialog is changed to Simple Mode. The [Simple Mode] is checked in this mode.

When changing from Detail Mode to Simple Mode, unplug MWuEASE and uEASE by pushing on the [Unplug] button before mode change.

7.3 Setting Menu

7.3.1 Target Menu

Selecting the [Target…] of the [File] menu displays the [Select Target] dialog of Fig.7-4.

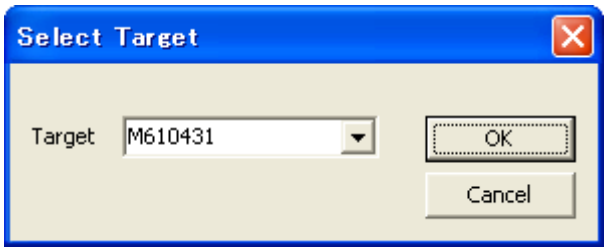


Fig.7-4 Select Target dialog

If target LSI is chosen from the pulldown list and the [OK] button is pushed, target LSI chosen as the [Target] field of main dialog will be displayed.

7.3.2 Serialization Menu

Selecting the [Serialization…] of the [Setting] menu displays the [Serialization] dialog.

Explanation of the [Serialization] dialog is described on Section 5.6 "Serialization Button".

8 Error Messages

This chapter describes the error messages that MWuEASE outputs.

8.1 Main Dialog Operation Related Errors

If an error occurs during operation of MWuEASE main dialog, one of the error messages shown below is displayed.

In *number* in the table below, the number corresponding to the error occurrence status is displayed. And in *filename*, the file name of the file where the error occurred is displayed.

Error Message	Description and Corrective Action
Activation was canceled because the FWuEASE.ini file was not found.	This error occurs if the FWuEASE.INI file is not found in the folder where FWuEASE.EXE is. Copy the FWuEASE.INI file onto the same folder as FWuEASE.EXE is in.
Cannot plug too many uEASEs.	The number of uEASE which is connected to PC is over the limit. Check the number of connected uEASE.
An illegal value was input to the "Flash Memory Offset" entry field.	Analysis of [Flash Memory Offset] failed. Check the entered offset value.
An illegal end record was found in *filename*.	An illegal end record was found in the Intel HEX format file specified in the [File Name] field. The file may be damaged.
A checksum error occurred in *filename*.	A checksum error occurred during reading of the HEX file specified in the [File Name] field. The file may be damaged.
An invalid end record was found in *filename*.	An invalid end record was found in the Motorola S record format file specified in the [File Name] field. The file may be damaged.
No valid end record was found in *filename*.	No valid end record was found in the Motorola S record format file specified in the [File Name] field. The file may be damaged.
No valid data record was found in *filename*.	No valid data record was found in the HEX file specified in the [File Name] field. Check the contents of the file.
filename could not be opened.	An attempt was made to open the HEX file specified in the [File Name] field, but failed. It is possible that no HEX file exists or the HEX file is currently opened by another application. Check the file name or check if the file is currently opened

	by another application.
Flash memory write address is a duplication of an address of a registered file.	A duplicate address was found between the HEX file specified in the [File Name] field and the HEX file registered in [File List]. Check the respective address ranges of these files.
An address where Flash memory is not implemented was detected in *filename*.	The address range determined by adding the offset specified in [Flash Memory Offset] to the address of the HEX file specified in the [File Name] field includes an address to which the flash memory is not allocated. Check the contents of the file and the value of [Flash Memory Offset].
The format of *filename* is illegal.	The format of the HEX file specified in the [File Name] field is illegal. The file may be damaged.
Data record having duplicate addresses was found included in *filename*.	There is a data record having duplicate addresses in the HEX file specified in the [File Name] field. The file may be damaged.
An illegal value was input to the "Security ID" entry field.	The value entered in the [Security ID] field is invalid. Check the value you entered.
A wrong value was input to the "Security ID" entry field.	The security ID entered in the [Security ID] field is illegal. Select [Initialize Flash memory and security setting.] and initialize the target microcontroller.
Cannot write log file.	An attempt was made to write the result of operation in the log file specified in the [Log File] field, but failed. Please confirm, the disk which the log file is saved in is writable.
Cannot open log file. The present processing was canceled.	An attempt was made to open the HEX file specified in the [Log File] field, but failed. It is possible that no log file exists or the log file is currently opened by another application. Check the file name or check if the file is currently opened by another application.
Cannot close log file.	An attempt was made to close the log file specified in the [Log File] field, but failed. Confirm that the disk which the log file is saved in is writable.
An illegal value was input to the "Starting Serial Number" entry field.	Analysis of [Start Serial Number] failed. Check the entered value.
An illegal value was input to the "Start Address" entry field.	Analysis of [Start Address] failed. Check the entered value.
Cannot omit any entry fields.	There are empty fields. Enter values into whole entry fields.

An illegal value was input to the "Incremental Value" entry field.	Analysis of [Incremental Value] failed. Check the entered value.
Serial numbers of *N* targets has overflowed. Push on OK button opens the Serialization dialog. Push on Cancel's button unplugs all targets.	Serial numbers of *N* targets has overflowed. Push OK button, and arrange the configuration of Serialization. Or, push on Cancel's button , and plug the number of targets which doesn't overflowed.
Serial number write address is specified on the area where Flash memory is not implemented.	Serial number write address is specified on the area where Flash memory is not implemented or on the unwritable area. Push Serialization button and check the [Start Address].
Serial number write address overlaps with an address of registered files. Continue?	Serial number write address overlaps with an address of registered files. Push OK button if you'd like to continue.
Serialization needs one plugged target at least.	No targets can be written serial numbers. Push it after succeeding plug.
uEASE is not connected. Check the connection. (Error code: 1005)	There is no uEASE that is connected to PC. Check USB cable and check the connection.
Internal MWuEASE error. (Error code:*number*)	MWuEASE may be malfunctioning. Check the connection with the uEASE, then reactivate MWuEASE. If this error recurs even after reactivation, contact your nearest LAPIS Semiconductor sales office and report how the error occurs and the error code (number).

8.2 uEASE and Target Board Related Errors

If an error about uEASE and target board occurs, error informations are displayed in the [Status] of [Connection List] field and printed in the log file. In addition, the POWER LED (Green) on uEASE will be blinking except Section 8.2.1 "USB Communication Errors".

In the following sections, the information about errors and how MWuEASE inform errors are described by the error category.

8.2.1 USB Communication Errors

This section describes about USB communication errors.

If the error of this category occurs, MWuEASE displays the error code in the [Status] of the [Connection List] field, and then prints the error code and the error message in the log file. The error code and error message are shown below.

Error code	Error message	Description and Corrective Action
0x5000	Failed to communicate with the uEASE. Check the connection.	An attempt was made to receive data from uEASE, but failed. Check USB cable and check the connection.
0x5001	Failed to communicate with the uEASE. Check the connection.	An attempt was made to transfer data to uEASE, but failed. Check USB cable and check the connection.
0x5002	MWuEASE Flash Writer may be malfunctioning. Check the connection, and then restart MWuEASE and the uEASE.	An inconsistency was found in USB communication with uEASE. MWuEASE may be malfunctioning. Check the connection with the uEASE, then reactivate MWuEASE. If this error recurs even after reactivation, contact your nearest LAPIS Semiconductor sales office and report how the error occurs and the error code (number).
0x5003	MWuEASE Flash Writer may be malfunctioning. Check the connection, and then restart MWuEASE and the uEASE.	
0x5004	MWuEASE Flash Writer may be malfunctioning. Check the connection, and then restart MWuEASE and the uEASE.	
0x5005	uEASE is not connected. Check the connection.	An attempt was made to open USB port for uEASE, but failed. Check USB cable and check the connection.

The POWER LED (Green) on uEASE cannot blink for errors in this section. Therefore you don't know which ones are failed targets. Try the indication on "Description and Corrective Action", and please use MWuEASE under the no error condition.

8.2.2 Target Setting or Status Related Errors

This section describes about target setting or status related errors.

If the error of this category occurs, MWuEASE displays the error message in the [Status] of the [Connection List] field, and then prints the error code and the error message in the log file. The error code and error message are shown below.

Note: The messages marked by (*) are printed only in the log file as supplementary information.

Error code	Error message	Description and Corrective Action
0x2002	Different target LSI.	The target name selected in the [Target] Combo box and the target microcontroller do not match. Connect the target microcontroller that matches selected target name.
0x2003	Error acquiring firmware version. (*)Please confirm connection to the target system.	The firmware version's format is illegal. Check the connection between the uEASE and the user target board.
0x2004	Different firmware version. (*)Please update New Firmware. Firmware version : x.xx	The version number of the firmware is not the latest. Please update to the latest firmware.
0x2005	Security ID Check.	The the security control of the target flash memory is not removed. Plug target again, then enter the correct security ID or select [Initialize Flash memory and security setting] in the Security ID checking dialog.
0x2006	Differences were detected.	As the result of the verification by Verify button, differences were detected between the data in the file registered in [File List] and the flash memory. Confirm that you have specified file in the current [File List] at the previous Write operation. Next, erase the flash memory contents and write data again, then perform verification again. If this error recurs, contact your nearest LAPIS Semiconductor sales office and report how the error occurs and the error code (number).

8.2.3 Target Operation Related Errors

This section describes about target operation related errors.

If the error of this category occurs, MWuEASE displays the error code in [Status] of the [Connection List] field, and then prints the error code and the error message in the log file. The error code and error message are shown below.

Error code	Error message	Description and Corrective Action
0x6100	Failed to access the target LSI. Check the user target system connected to the uEASE.	A discrepancy was detected in verification after writing to the flash memory. This error is sometimes detected when flash memory is overwritten. Erase the flash memory contents and write data again, then perform verification again. If this error recurs, the flash memory on the target microcontroller may be damaged. In that case, replace the target microcontroller.
0x6302	Failed to access the target LSI. Check the user target system connected to the uEASE.	An attempt was made to make a reset, but failed. Check the connection between the uEASE and the user target board, then reactivate the system. If an error occurs even after reactivation, replace the target microcontroller.
0x6303	Failed to access the target LSI. Check the user target system connected to the uEASE.	Time-out occurred in flash write, chip erasure, or block erasure processing. Check the connection between the uEASE and the user target board, then reactivate the system. If an error occurs even after reactivation, replace the target microcontroller.
0x6305	Failed to access the target LSI. Check the user target system connected to the uEASE.	During flash writing, the power supply voltage of the target microcontroller (VTref) falls below the guaranteed range. Check the power supply.
0x6307	Failed to access the target LSI. Check the user target system connected to the uEASE.	An attempt was made to activate the on-chip ICE block, but failed. Check the connection between the uEASE and the user target board, then reactivate the system. If an error occurs even after reactivation, replace the target microcontroller.
0x6308	Failed to access the target LSI. Check the user target system connected to the uEASE.	The Flash ROM operating voltage (VDDL) when the flash memory is controlled is outside the normal range.
0x6309	Failed to access the target LSI.	The power supply voltage of the target

	Check the user target system connected to the uEASE.	microcontroller (VTref) is outside the normal range. Check the power supply.
0x630C	Failed to access the target LSI. Check the user target system connected to the uEASE.	The product ID of the target microcontroller is illegal. Check the connection between the uEASE and the user target board.
0x4000	Internal MWuEASE error	MWuEASE may be malfunctioning. Check the connection with the uEASE, then reactivate MWuEASE. If this error recurs even after reactivation, contact your nearest LAPIS Semiconductor sales office and report how the error occurs and the error code (number).
0x4001		
0x4002		
0x4003		
0x4004		
0x4005		
Other than above	MWuEASE Flash Writer may be malfunctioning. Check the connection, and then restart MWuEASE and the uEASE.	MWuEASE may be malfunctioning. Check the connection with the uEASE, then reactivate MWuEASE. If this error recurs even after reactivation, contact your nearest LAPIS Semiconductor sales office and report how the error occurs and the error code (number).

9 Notes

9.1 About Error in Connecting uEASE to PC

When more than one uEASE is connected to Windows PC via USB Hub and cable, Windows is possible to show an error "USB Device Not Recognized".

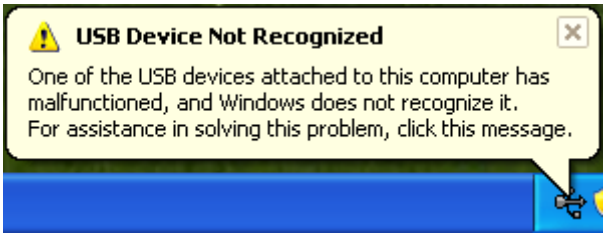


Fig.9-1-1 Popup of "USB Device Not Recognized" error

In case the error occurs, open Device Manager (*) and confirm if [Unknown Device] is displayed under [Universal Serial Bus controllers] tree. When [Unknown Device] is displayed, the uEASE may not be recognized by Windows (Fig.9-1-2).

(*) The procedure to open Device Manager is as follows (in the case of Windows XP).

1. Display the popup menu of [My Computer], and select the [Properties].
2. Select the [Hardware] tab in the displayed dialog and Push on the [Device Manager] button.

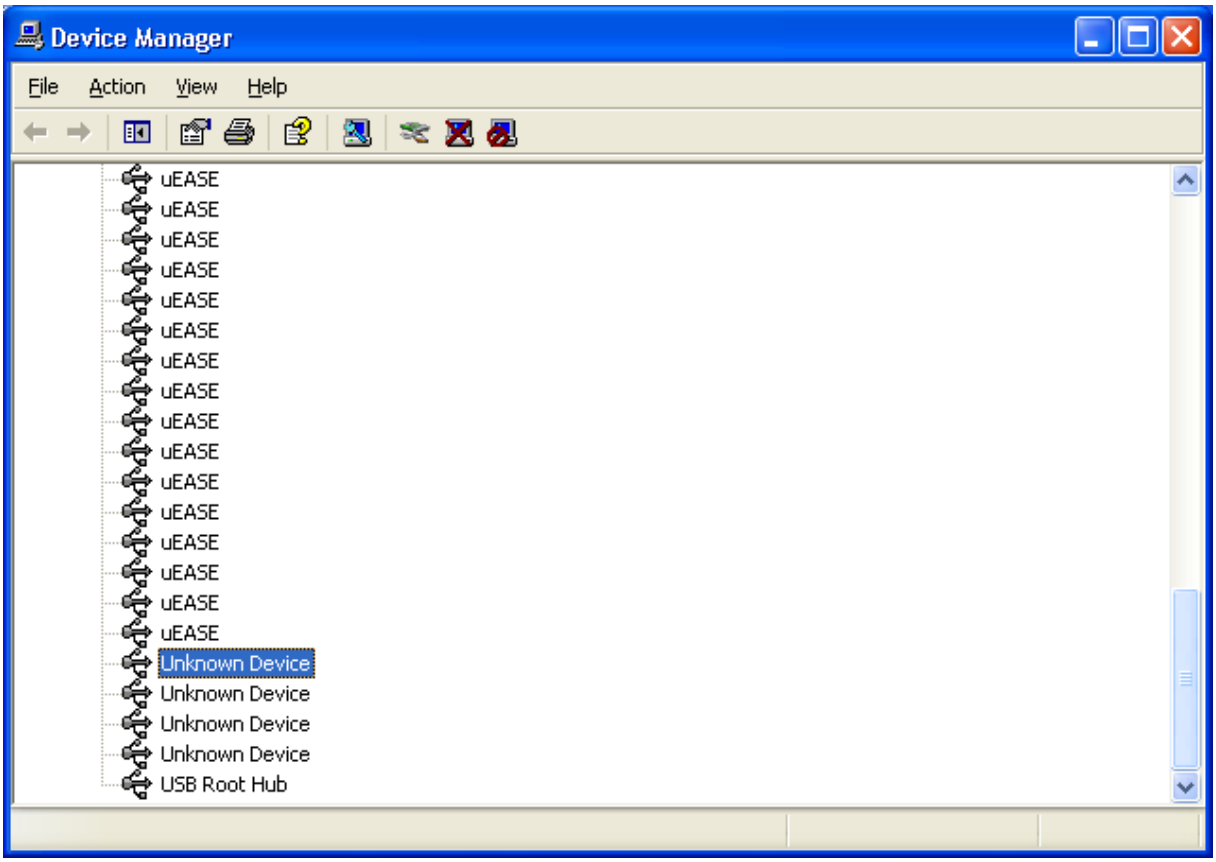


Fig.9-1-2 Display of "Unknown Device"

To solve this error, pull out USB cable from PC, and then power off the all USB Hub and uEASE once. Then, power up them and connect USB cable to PC again.

9.2 User Acount Control Message on Windows 7

When MWuEASE is started on Windows 7, the following user account control message may be displayed. In that case, choose "yes."

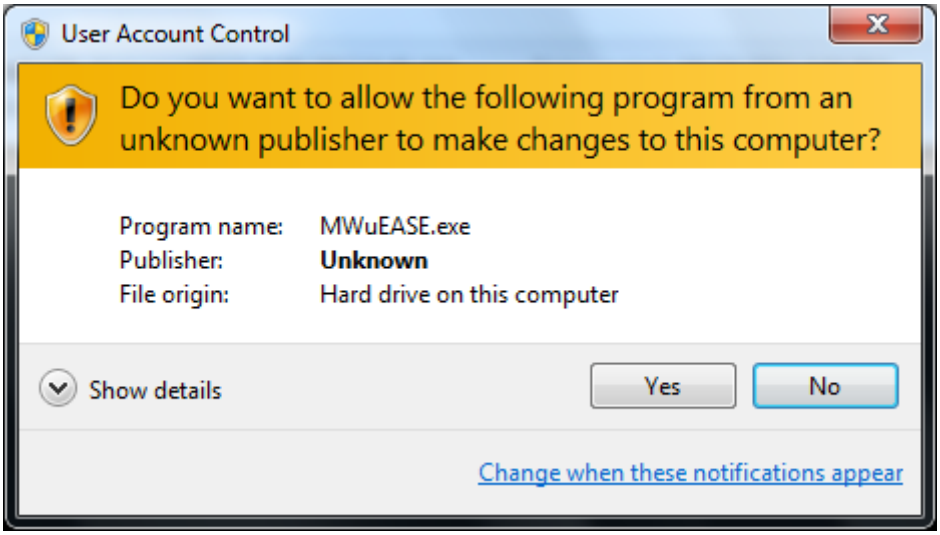


Fig.9-2 Use Acount Control Message

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MWuEASE
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