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April 1st, 2010
Renesas Electronics Corporation

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User's Manual

F-ZTAT™ Microcomputer On-Board Writing Program (HS6400FWIW5S)

User's Manual

Renesas Microcomputer Development Environment System

Renesas Electronics
www.renesas.com

Rev.1.0 2000.10

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The user can use the F-ZTAT™ microcomputer's on-board writing function by installi
board writing program to the host computer.

The user must read and understand this manual before using the on-board writing prog
user must keep this manual and read it when necessary. The user must not use the on-
writing program before reading this manual.

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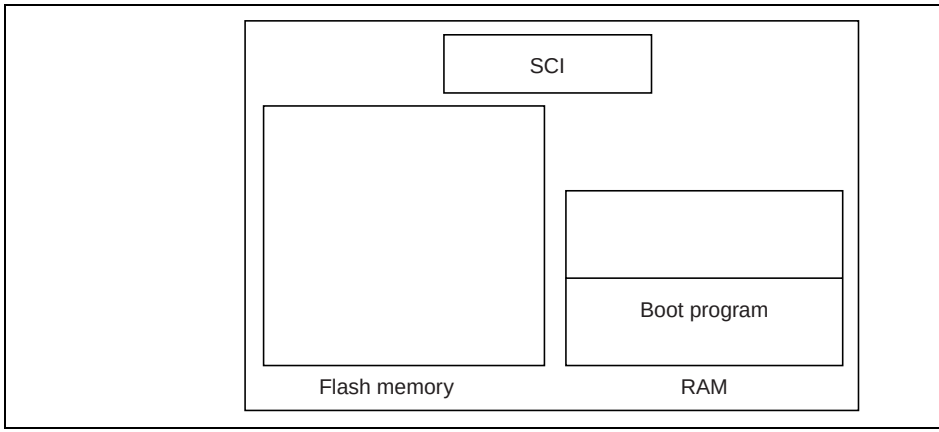
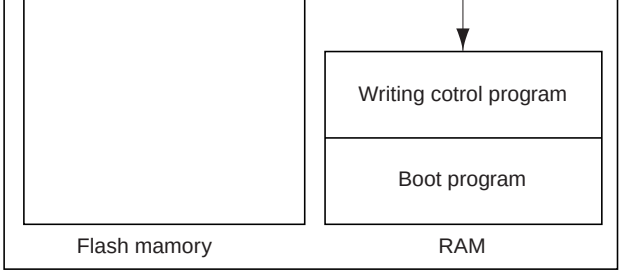
11.1.1 Boot Mode

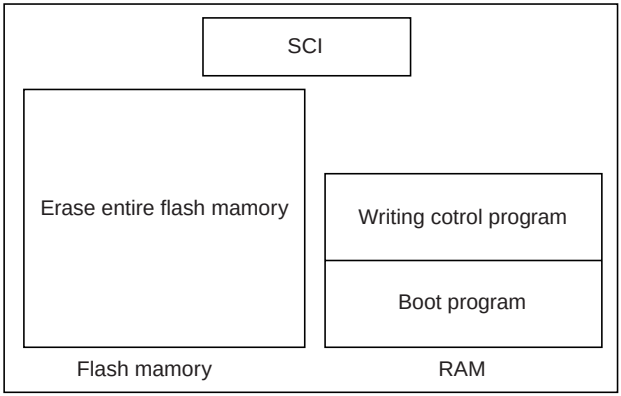
The boot program installed in the microcomputer loads the writing program and erase
contents of the flash memory.

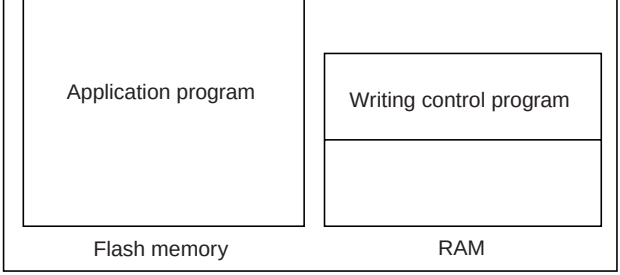
After selecting the boot mode, reset and start-up the microcomputer. The microcompu
the boot program to RAM and then start.





When the boot program has loaded the writing program, the boot program will erase th contents of the flash memory and hand control to the writing program.

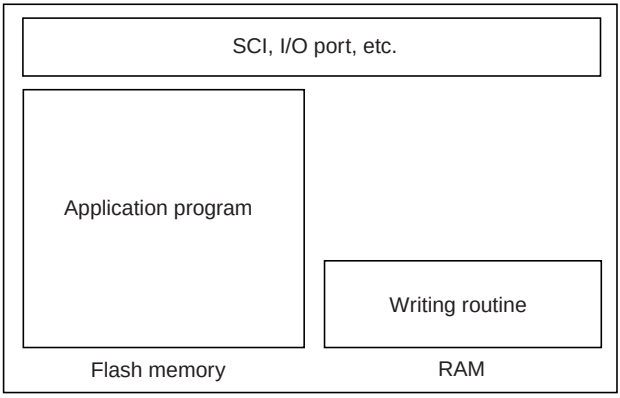


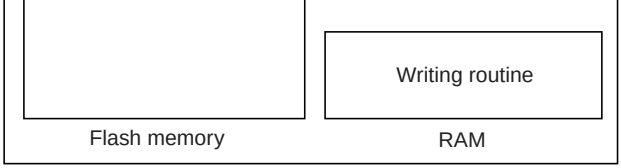


1.1.2 User Program Mode

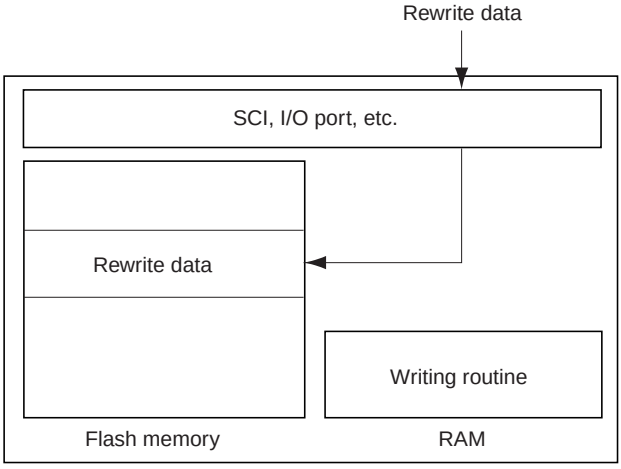
Application programs erase the contents of and write to the flash memory.

The application program will start to write to the flash memory when the microcompu
the user program mode. While the application program is writing to the flash memory
cannot read the flash memory; therefore, the user must load the writing routine to RA
external memory to execute the writing routine.





The writing routine will acquire rewriting data from the SCI, I/O port, etc. and writes th
flash memory. The writing routine can acquire the writing data from arbitrary peripher
according to the user system's function.



rewrite the contents of the flash memory.

The on-board writing program consists of two programs, which are:

- Main program: runs on the host computer (Flash.exe)
- Writing program: runs on the microcomputer (xxx.inf, xxx.sub, xxx.src; where xx the product type)

Use the main program as a user interface and host for on-board writing. Use the writi as a routine to erase and write the contents of the flash memory. Use these two progra the contents of and write to the flash memory in boot mode.

The main program communicates with the boot program, which is installed in the mic and loads the writing program to the RAM of the microcomputer. The main program t communicates with the writing program and writes an application program to the mic flash memory.

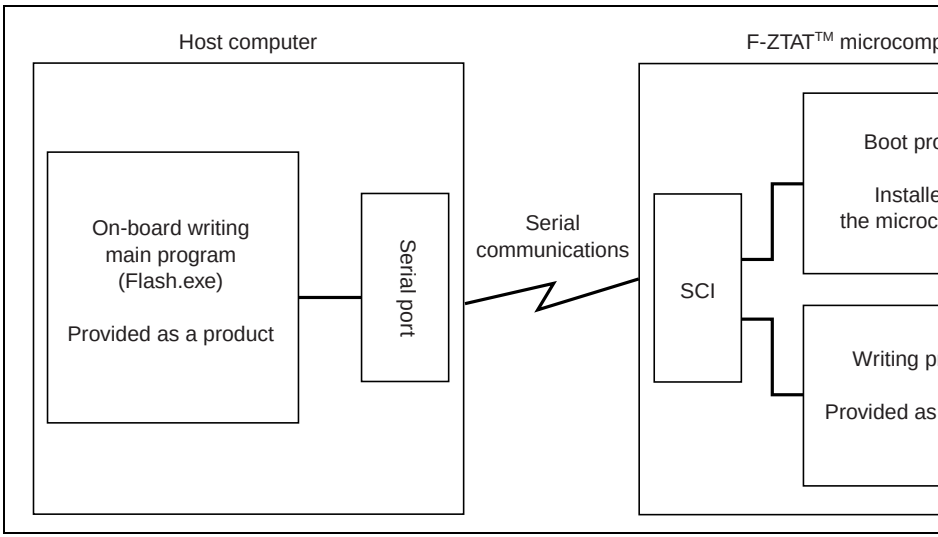


Figure 1.1 Model of Operation of an On-Board Writing Progra

- xxx.inf: Information file (INF file)
- xxx.sub: Main writing program (S-type load module)
- xxx.src: Main writing program (source program)

File xxx.inf gives information relating to the microcomputer and writing program. File
contains setting for the main program running on the host computer to select the functi
product.

Files xxx.sub and xxx.src are writing programs. xxx.sub is executed in the boot mode t
the flash memory. file xxx.sub, which is an S-type load module. The frequency in file x
be modified. For details, refer to section 3.1, Modifying the Writing Program. The user
use file xxx.sub as sample program.

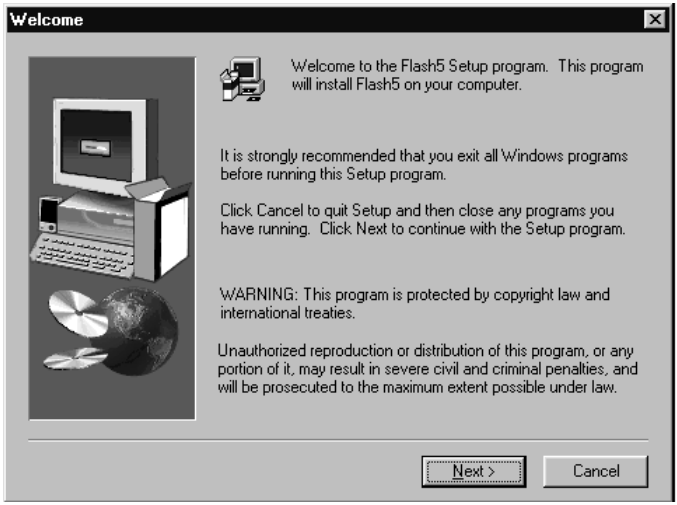


Figure 2.1 [Welcome] Dialog Box

When the dialog box in figure 2.2 is displayed, input the destination directory. When n
input, the standard directory is assumed.

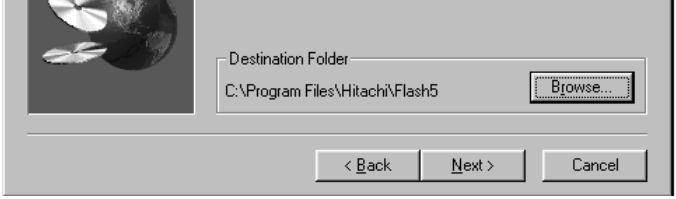


Figure 2.2 [Choose Destination Location] Dialog Box

Click the [Next >] button when you have finished. The installer will copy the program computer. When the installer has completed copying, the dialog box shown in figure 2. displayed.

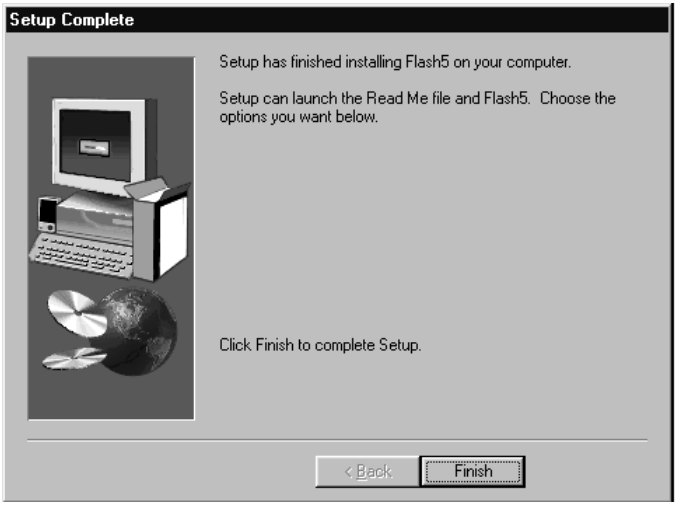


Figure 2.3 [Setup Complete] Dialog Box

Click the [Finish] button to complete installation.

calculate the parameters used to set the timing. However, since the writing program ca
determine the clock, which is in use, the user must determine the clock and notify the
program.

The clock in the writing program can be modified in the following two ways:

- Through an on-board writing operation (setup function)
- By modifying part of the program

Details on the former way of notifying the clock will be given later. Here, we will exp
latter method.

Each writing program consists of the following three files (xxx means product type).

- xxx.inf: Information file (INF file)
- xxx.sub: Main writing program (S-type load module)
- xxx.src: Main writing program (source program)

Modify the program via the source program (xxx.src). Use the following procedure:

1. Modify xxx.src.

   Use a text editor to modify xxx.src. Search for the definition symbol MHZ or KHZ
   program, these symbols are written so that they represent the operation frequency.
   these symbols are defined at the beginning of a program. Modify the MHZ or KHZ
   to the clock of the user system. Fraction that goes beyond two digits below the frac
   are rounded down for MHZ, and fraction that goes beyond three digits below the f
   point are rounded down for KHZ. Refer to the comments for details.
2. Convert xxx.src to an S-type load module.

   Use the assembler, linkage editor, and object converter to convert xxx.src to an S-t
   module. For details, refer to the user's manual for each software tool.
3. Replace xxx.sub with the created an S-type load module.

   To save the created file under a different name or in a different directory rather tha
   xxx.sub with the modified S-type load module, follow the procedure below:

For details, refer to the hardware manual.

Note: Set the clock correctly. If the clock parameters are not set or incorrectly set, the memory will not be erased or written correctly.

3.2 Connecting the Host Computer to the User System

This section will explain how to connect the host computer's serial port to the microcon SCI. The host computer's serial port and microcomputer's SCI runs at different voltage the user cannot connect them directly.

1. Connecting an IBM PC to an F-ZTAT™ microcomputer

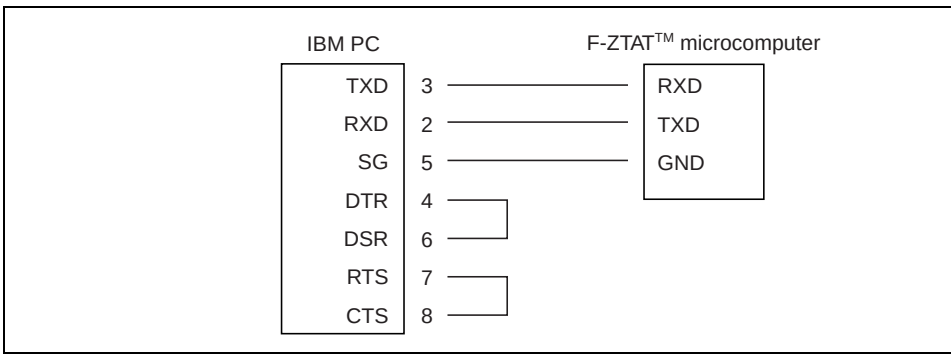


Figure 3.1 Connecting IBM PC Serial Port to SCI (Model)

For details on serial port specifications, refer to the manual of the host computer. For d SCI specifications, refer to the microcomputer's hardware manual.

3.3 Setting the Serial Port

Table 3.1 shows the communication specifications for the host computer and microco
up the serial port to match these specifications.

Table 3.1 Communications Specifications

Item	Specifications
Communications	Asynchronous serial
Data length	8 bits
Stop bit length	1 bit
Parity bit	None
Flow control	None
Bit rate	2,400 bit/s, 4,800 bit/s, 9,600 bit/s, 19,200 bit/s, 38,400 bit/s, 5 57,600 bit/s, 115,200 bit/s

Note: The on-board writing program automatically sets the bit rate.

directly; the on-board writing program will display the window shown in figure 4.1.

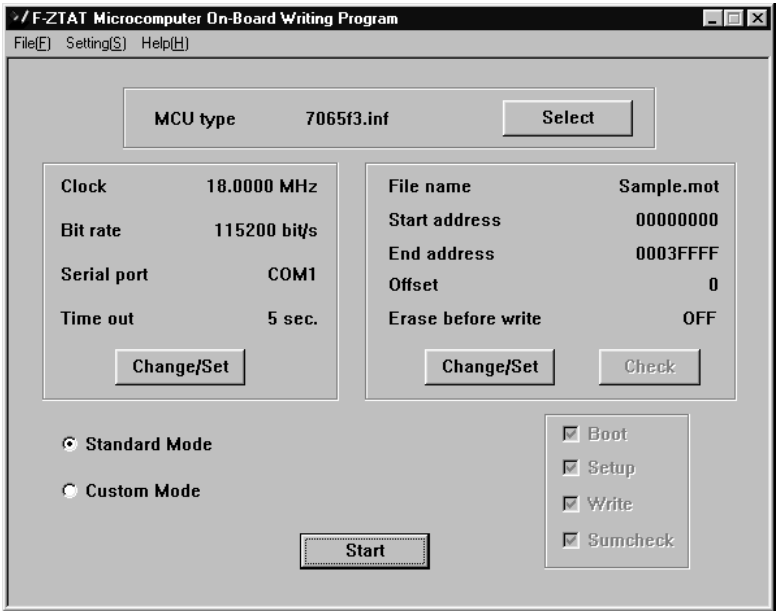


Figure 4.1 Main Window

The window will show the settings from the last time the user executed (clicked the [S for) the on-board writing program. Clicking the [Start] button without modifying anyt start the on-board writing program with the same conditions.

4.2 Ending the On-Board Writing Program

To end the on-board writing program:

1. Select [Exit] from the [File] menu.
2. Click the button at the upper-right hand corner of the window (the [x] button); or

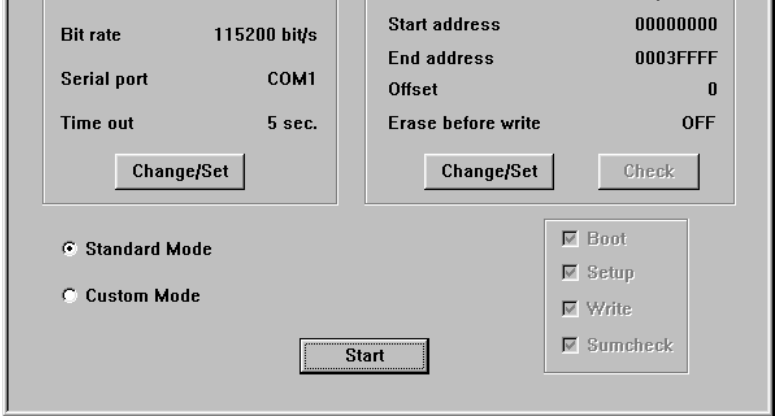


Figure 4.2 Main Window: Ending the On-Board Writing Program

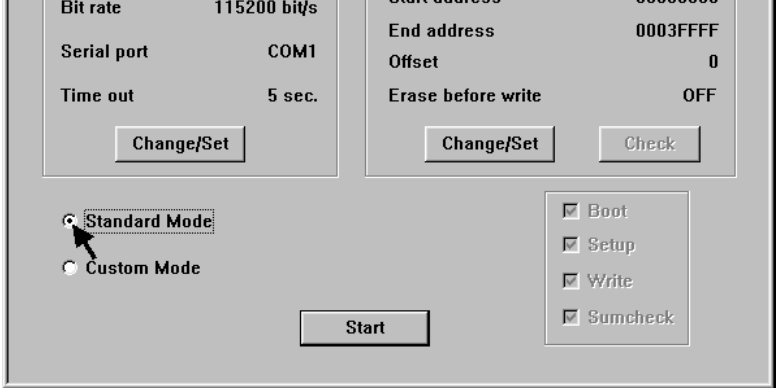


Figure 4.3 Main Window: Selecting the Standard Mode

Select the Standard Mode check box located at the lower-left hand corner of the main
Then, set the microcomputer, clock, bit rate, timeout, file name, start address, end add
offset, and click the [Start] button. The boot program will automatically execute the w
program and write the flash memory. Standard Mode is useful when the user wants to
the entire contents of the flash memory.

For details on Custom Mode, refer to section 5, Using the On-Board Writing Program
Operations.

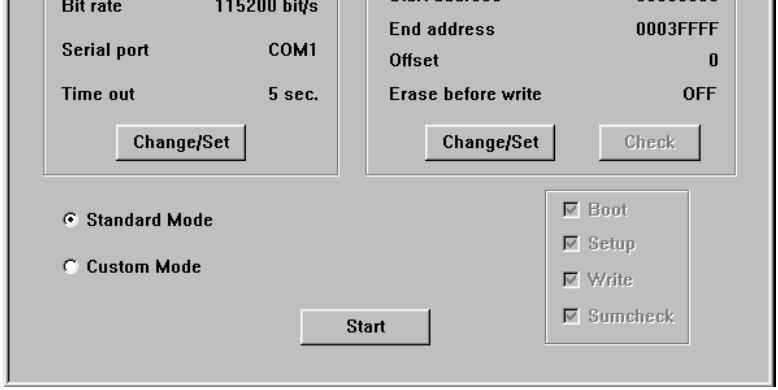


Figure 4.4 Main Window: Selecting the Microcomputer

1. Microcomputer

   Select the microcomputer type.

   Specify the type as the name of the writing program information file (INF file) for t microcomputer.

   Refer to the attachment for the microcomputer type and its information file.

The on-board writing program uses this information to acquire information on the micr and its writing program.

Selecting the microcomputer (information file) will reset the settings to the new setting the same microcomputer as last time will still reset the settings.

Clicking the [Select] button selects the microcomputer type. Clicking the [Select] butto figure 4.5.

Figure 4.5 [Open] Dialog Box: Selecting the Microcomputer

Select the information file (INF file) for the microcomputer in use.

The dialog box will display the directory including the information file currently selec
user. Usually, the writing program is stored in the directory where the on-board writin
installed. So the on-board writing program will display that directory. However, the u
the information file from a different directory.

After selecting the file, click [Open]. Clicking the [Cancel] button will not select the f
close the dialog box. Alternatively, close the dialog box without selecting the file by c
button at the upper-right hand corner button ([x] button).

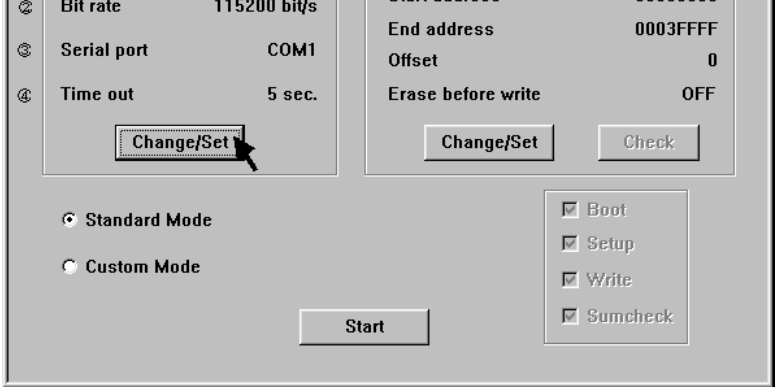


Figure 4.6 Main Window: Clock and Communication Setting

1. Clock

   Microcomputer clock (system clock frequency).

   The on-board writing program uses this clock to calculate how long voltage is appli flash memory cells during write operations, and to set the SCI's bit rate.

2. Bit rate

   Bit rate for serial communications.

   The on-board writing program will transfer application programs at this bit rate.

   The on-board writing program cannot set certain bit rates because of the clock frequ Microcomputer's SCI uses the system clock for timing. Some system clocks will ge errors in the bit rate. Set a bit rate such that the error is within 3%. For details, refer hardware manual.

3. Serial port

   The host computer uses its serial port to communicate with the F-ZTAT™ microcon (user system). Input the communication port number. Default is COM1.

4. Timeout

   The time over which the system must remain unresponsive to the user. The user car time between 1 and 300 s, but 5 s is usually suitable.

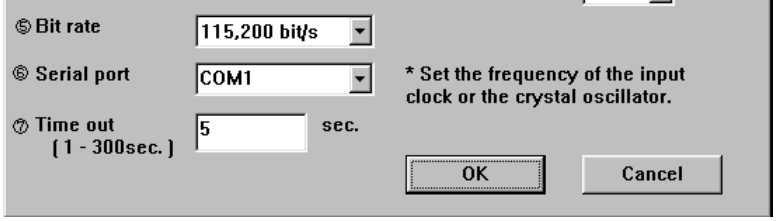


Figure 4.7 [Clock and Communication Setting] Dialog Box

1. Input clock

   Enter the frequency of the clock input to the microcomputer, or the external crysta (connected to the microcomputer) clock as an integer with a decimal fraction. The enter up to four digits after the decimal point.

2. Clock mode

   In some microcomputers, you can select the clock mode. In such cases, select a su mode from those available in that microcomputer. Select the clock mode from the

3. Frequency ratio (CKM)

   Input a multiplier to derive the system clock (master clock) from the input clock. S frequency ratio from the list box.

4. Frequency ratio (CKP)

   In some microcomputers, you can select the frequency ratio (CKP). Input a multip the peripheral clock from the input clock. Select the frequency ratio from the list b

5. Bit rate

   Enter the bit rate to transfer an application program. Select a bit rate from the list b one of the following eight bit rates:

   — 2,400 bit/s
   — 4,800 bit/s
   — 9,600 bit/s
   — 19,200 bit/s
   — 38,400 bit/s
   — 56,000 bit/s
   — 57,600 bit/s

program. Communication other than loading an application may use the bit rate of the microcomputer.

When the user does not select bit rate or selects [None] from the list box, the on-board program will continue to use the existing bit rate. However, the user must always select when using a writing program that has setup functions.

Click the [OK] button to set the entered values. Click the [Cancel] button to clear the va entered in the dialog box and close the dialog box. The dialog box can also be closed th setting the values by clicking the button at the upper-right hand corner ([x] button).

4.6 Write and Erase Setting

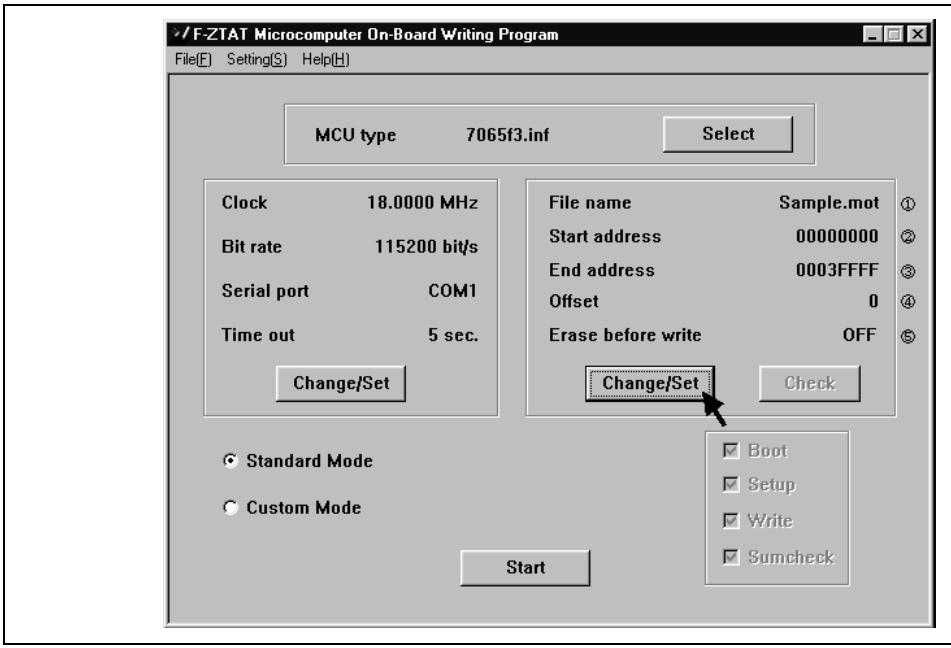


Figure 4.8 Main Window: Write and Erase Setting

An offset can be added to the address of the S-type load module storing the applica program to set the appropriate address range in the flash memory.

For example, when the user sets an offset of 1000 (hexadecimal), the on-board wri program will write data of address H'0 in the S-type load module to address H'100 flash memory.

5. Erase before write

   Indicates whether or not the contents of the flash memory will be erased before wr Standard Mode, this is always set OFF (the contents of the flash memory are not e

When the [Modify/Set] button is clicked, the on-board writing program will display th Erase Setting] dialog box to modify the setting contents.

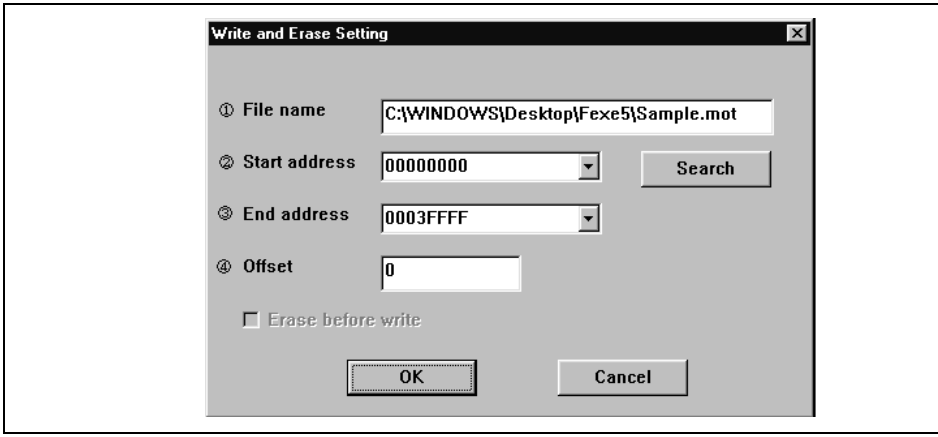


Figure 4.9 [Write and Erase Setting] Dialog Box

1. File name

   Enter the name of the file storing the application program. Click the [Search] butto the dialog box to specify a file to search for.

   Specify the absolute path. If only the file name or a relative path is specified, the f be found or a file with the same name in a different directory may be read, depend current directory.

by clicking the button at the upper-right hand corner ([x] button).

4.7 Starting On-Board Writing

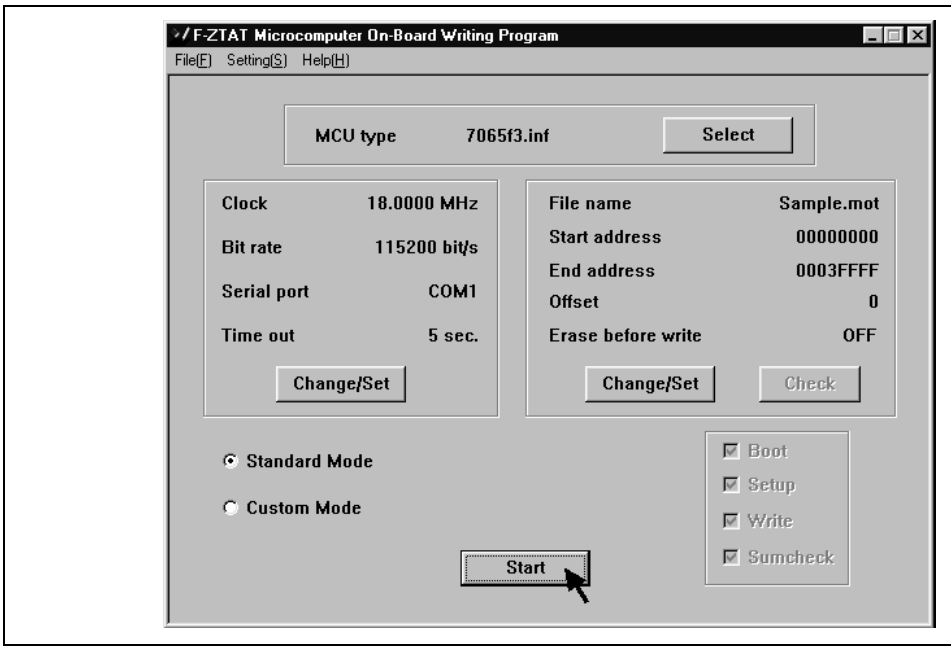


Figure 4.10 Main Window: Starting On-Board Writing

On-board writing begins when the [Start] button is clicked. When on-board writing beg
dialog box in figure 4.11 below will be displayed.

Click [OK] to set the microcomputer to the boot mode and reset the microcomputer. C
[Cancel] button to stop the operation.

When boot programming begins, the on-board writing program will display a cancel/i
box as shown in figure 4.12.

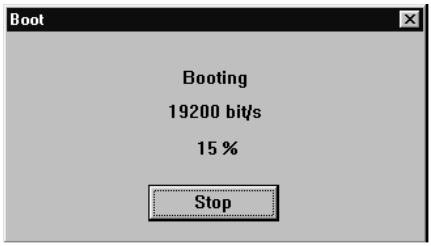


Figure 4.12 Display During Boot Programming

The boot program inside the microcomputer runs the writing program. Click the [Can
cancel on-board writing. When on-board writing to the flash memory commence, the
cancel/information box shown in figure 4.13 will be displayed.

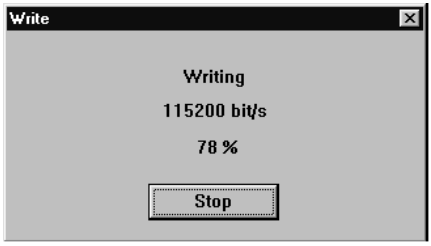


Figure 4.13 Display During On-Board Writing

The writing program writes the application program to the flash memory. Click the [C
button to cancel on-board writing.

Figure 4.14 [End] Dialog Box

Writing has been completed. Click the [OK] button. When the writing program has a cl
function, the writing programs checks the checksum of the entire flash memory against
personal computer when writing has completed.

1. On-board writing in several steps

   In operation as described in section 4, Using the On-Board Writing Program: Basi
   Operations, the on-board writing program writes to the entire flash memory. Howe
   board writing program can execute the boot program alone or write to the flash me
   several steps. On-board writing includes the following four processes:

   — Boot: Boot process of the writing program
   — Set up: The writing program sets up (clock and bit rate) process (some product
     this process)
   — Write: Writing application programs to the flash memory
   — Sumcheck: Calculates the checksum for the contents of the flash memory.

   In the Boot process above, the on-board writing program loads a writing program
   microcomputer to its RAM. When the writing program receives control from the b
   program, the writing program will wait for a command from the host computer (co
   state). The Set up process sets the clock and bit rate for the writing program. The W
   transfers the application program from the host computer and writes it to the flash
   These processes can be executed individually. Sumcheck calculates the checksum
   contents of the flash memory and displays the results.

2. Use a writing program written by the user

   The user can customize the original writing program or write a new one. When suc
   have communications specifications identical to the main on-board writing progra
   programs can be used for on-board writing.

3. User program mode

   The on-board writing program can be used in user mode which uses the microcom
   In user mode, rewriting data can be acquired from the SCI, I/O port, etc. If the spe
   between the application program and the main on-board writing program are ident
   main on-board writing program can be used for the host of the write process.

To use the on-board writing program in any of the ways described above, the user mu
the basic functions of F-ZTAT™ microcomputers. Read and understand the hardware
the microcomputer before using the on-board writing program in such ways.

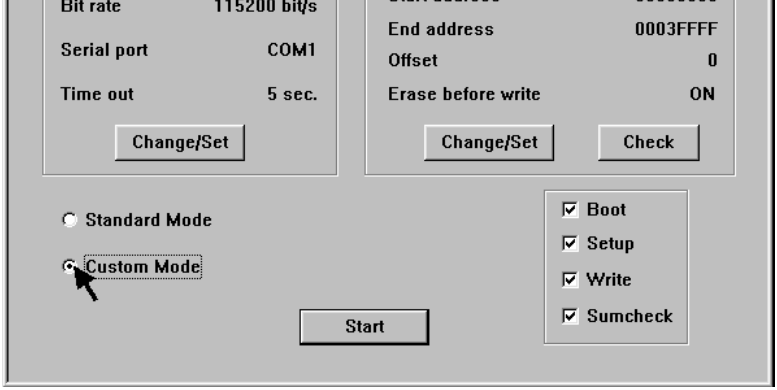


Figure 5.1 Main Window: Selecting Custom Mode

Select the Custom Mode check box at the lower-left hand corner of the main window. T
mode is used to customize the writing program or in user program mode. However, if t
an incorrect value, the flash memory may be damaged.

For details on Standard Mode, refer to section 4, Using the On-Board Writing Program
Operations.

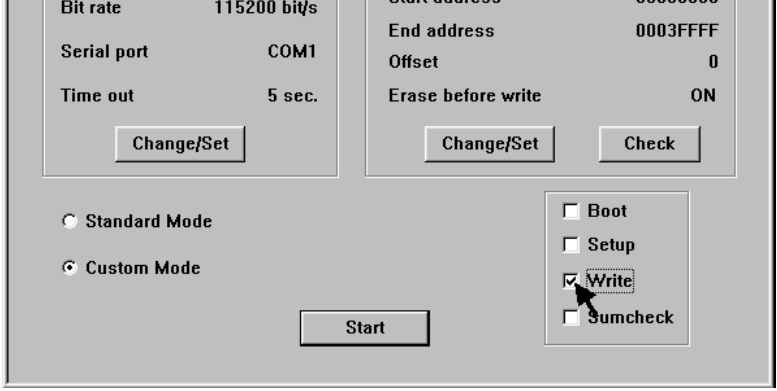


Figure 5.2 Main Window: Selecting Boot/Set up/Write

In Custom mode, select the process to be executed when the [Start] button is clicked. T
select Boot, Set up, Write, or Sumcheck from the lower-right hand corner of the main
The user must select the processes to execute.

- Boot: Boots the writing program
- Set up: Sets up the writing program
- Write: Writes the application program to the flash memory
- Sumcheck: Calculates the checksum for the contents of the flash memory.

When the user selects more than on processes, the on-board writing program will exec
processes in the order: Boot, Set up, Write, then Sumcheck.

5.4 Specifying the Block to Erase

When the microcomputer enters boot mode, the boot program will erase the whole fla
therefore, the user does not have to erase the flash memory before writing data to it. H
the user program mode, the user must explicitly erase the contents of the target addres
except regions in which the contents have already been erased.

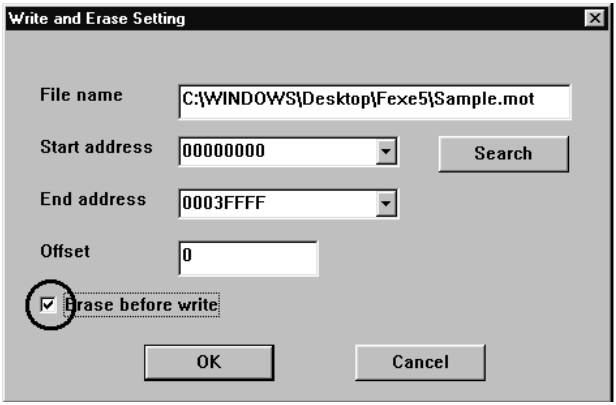


Figure 5.3 [Write and Erase Settings] Dialog Box: Selecting Erase befor

Selecting the Custom Mode automatically selects the [Erase before write] check box. T
the flash memory does not have to be erased by block, click this check box to cancel th

Selecting the [Erase before write] check box then clicking the [OK] button in the [Writ
Setting] dialog box will display the [Erase Block Selection] dialog box.

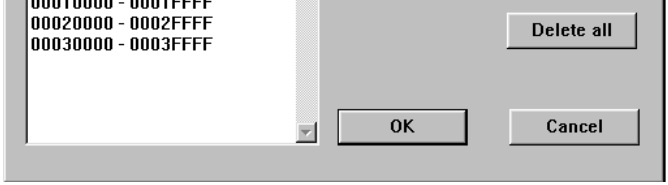


Figure 5.4 [Erase Block Selection] Dialog Box

1. Erase block

   Displays the block to erase before writing.

   Opening the dialog box will display the blocks to erase. Some or all of the blocks
   selected in the [Write and Erase Setting] dialog box can be chosen for erasure.

2. Adding or deleting the block to erase

   Use the list box to select the blocks to be erased. Click the [Add] button to add the
   blocks to be erased. Click the [Delete] button to remove the block from the list of
   erased. Click the [Delete all] button to delete all of the blocks from the list for eras

Some or all of blocks in the memory range which was specified by the user in the [Wr
Erase Setting] dialog box can be specified for erasure in the [Erase Block Selection] d
Use this dialog box to remove blocks that have already been erased and blocks which
erased.

Click [OK] after the block addresses have been entered. Click the [Cancel] button to c
values entered in the dialog box and close the dialog box. The dialog box can also be
the selections cancelled by clicking the button at the upper-right hand corner ([x] butt
cancelled, the [Write and Erase Setting] dialog box will be displayed again.

To check the blocks that have been erased, click the [Check] button in the main windo

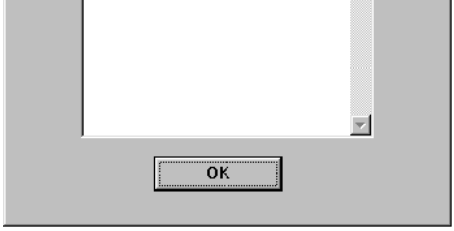


Figure 5.5 [Erase Block Checking] Dialog Box

The [Setting] pull-down menu has three items. The user can select the following dialo through these menus instead of clicking buttons in other dialog boxes.

- [Setting]–[MCU type]: Select the MCU type.
- [Setting]–[Clock/Communication]: Set the clock and bit rate.
- [Setting]–[Write/Erase]: Make settings for writing and erasing.

6.3 [Help] Menu

The [Help] menu has an [About] item. Select this item to display the dialog box in fig dialog box shows the version of the on-board writing program.

Click the [OK] button to close this dialog box. The dialog box can also be closed and selections cancelled by clicking the button at the upper-right hand corner ([x] button).

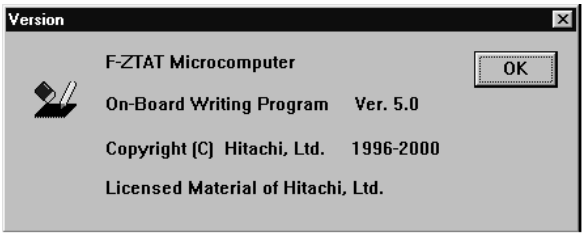


Figure 6.1 Information on the Version

Figure 7.1 Error Dialog Box

7.2 List of Error Messages

No. 100

[Message]: Boot error: Bit-rate alignment was failed.

[Description]: Bit-rate alignment failed. The host computer could not receive H'0x0
Check the following:
Is the connection between the host computer and user system correct?
and adapter board, etc.)
Are the settings of the serial port of the host computer correct?
Is the serial port of the host computer operating correctly?
Is the correct microcomputer selected?
Are the contents of the information file (INF file) correct?
Was the microcomputer reset in boot mode?

No. 101

[Message]: Boot error: Bit-rate alignment was failed.

[Description]: Bit-rate alignment failed. The host computer received other than H'0x
failed.
Check the following:
Is the connection between the host computer and user system correct?
and adapter board)
Are the host computer and serial port settings correct?
Are the host computer and serial port operating correctly?
Is the correct microcomputer selected?

Is the connection between the host computer and user system correct? (
and adapter board)
Are the host computer and serial port settings correct?
Are the host computer and serial port operating correctly?
Is the correct microcomputer selected?
Are the contents of the information file (INF file) correct?
Has the on-board writing program booted the microcomputer?

No. 103

[Message]: Boot error: Writing program transfer was failed.

[Description]: An error occurred while transferring the writing program.
Check the following:
Is the connection between the host computer and user system correct? (
and adapter board)
Are the host computer and serial port settings correct?
Is the correct microcomputer selected?

No. 104

[Message]: Boot error: Writing program transfer was failed. (size error)

[Description]: The writing program is too large.
Check the following:
Is the correct microcomputer selected?
Are the contents of the information file (INF file) correct?
Is the writing control program (SUB file) correct?

No. 105

[Message]: Boot error: Writing program transfer was failed. (time out)

[Description]: The microcomputer remains unresponsive to the user while the writing
being transferred.
Check the following:

[Description]: An error occurred while the flash memory was being erased.
Check the following:
Is the connection between the host computer and user system correct? (host computer and adapter board)
Are the host computer and serial port settings correct?
Is the correct microcomputer selected?
If the settings and operations are correct, the microcomputer may be damaged.

No. 107

[Message]: Boot error: Flash memory erase was failed. (time out)

[Description]: The microcomputer remains unresponsive to the user while the entire memory is being erased.
Check the following:
Is the connection between the host computer and user system correct? (host computer and adapter board)
Are the host computer and serial port settings correct?

No. 108

[Message]: Setup error

[Description]: An error occurred during setup.
Check the following:
Is the connection between the host computer and user system correct? (host computer and adapter board)
Are the host computer and serial port settings correct?
Is the correct microcomputer selected?
Are the information file (INF file) contents correct?
Is the writing program (SUB file) correct?
Are the writing program and user system selecting the same multiplier

Is the correct microcomputer selected?
Are the information file (INF file) contents correct?
Is the writing program (SUB file) correct?

No. 110

[Message]: Write error: Flash memory erase was failed.

[Description]: An error occurred while the flash memory was being erased.
Check the following:
Is the connection between the host computer and user system correct? (
and adapter board)
Are the host computer and serial port settings correct?
Is the correct microcomputer selected?
Are the information file (INF file) contents correct?
Is the writing program (SUB file) correct?
Is the clock correct?
If the clock setting is incorrect, the time to apply voltage to erase the con
the memory cells cannot be controlled correctly. If the settings and opera
correct, the microcomputer may be damaged.

No. 111

[Message]: Write error: Flash memory erase was failed. (time out)

[Description]: The microcomputer remains unresponsive to the user while the flash m
being erased.
Check the following:
Is the connection between the host computer and user system correct? (
and adapter board)
Are the host computer and serial port settings correct?
Is the correct microcomputer selected?
Are the information file (INF file) contents correct?
Is the writing program (SUB file) correct?
Is the clock correct?
If the clock setting is incorrect, the time to apply voltage to erase the con

and adapter board)
Are the host computer and serial port settings correct?
Is the correct microcomputer selected?
Are the information file (INF file) contents correct?
Is the writing program (SUB file) correct?
Is the clock correct?

If the clock setting is incorrect, the time to apply voltage to erase the co
the memory cells cannot be controlled correctly. If the settings and oper
correct, the microcomputer may be damaged.

No. 113

[Message]: Write error: Flash memory write was failed. (time out)

[Description]: The microcomputer remains unresponsive to the user while writing to
memory.
Check the following:
Is the connection between the host computer and user system correct?
and adapter board)
Are the host computer and serial port settings correct?
Is the correct microcomputer selected?
Are the information file (INF file) contents correct?
Is the writing program (SUB file) correct?
Is the clock correct?

If the clock setting is incorrect, the time to apply voltage to erase the co
the memory cells cannot be controlled correctly, and the SCI bit rate ca
correctly.

Are the host computer serial port settings correct?
Is the correct microcomputer selected?
Are the information file (INF file) contents correct?
Is the writing program (SUB file) correct?

No. 115

[Message]: Sumchecks of flash memory and buffer memory in PC are not matched.

[Description]: The checksum for the contents of flash memory and of the PC buffer m
not match.
Check the following:
Is the connection between the host computer and user system correct? (
and adapter board)
Are the host computer serial port settings correct?
Is the correct microcomputer selected?
Are the information file (INF file) contents correct?
Is the writing program (SUB file) correct?
Is the clock correct?
If the clock setting is incorrect, the timing for applying voltage to write t
memory cells cannot be controlled correctly, and the SCI bit rate cannot
correctly.

No. 116

[Message]: Serial port could not open.

[Description]: The host computer serial port could not be opened.
Check that the serial port specified can be used. Some personal comput
cannot use COM2.

Are the host computer and serial port operating correctly?

No. 118

[Message]: Serial port write was failed.

[Description]: An error occurred while writing data to the host computer serial port.
Check the following:
Is the connection between the host computer and user system correct?
and adapter board)
Are the host computer and serial port settings correct?
Are the host computer and serial port operating correctly?

No. 119

[Message]: No clock and bit rate are set.

[Description]: Set the clock and bit rate.

No. 120

[Message]: No file name, start address, end address, and offset are set.

[Description]: Set the file name, start address, end address, and offset.

No. 121

[Message]: No Boot/Setup/Write/Sumcheck are selected.

[Description]: Select the process to execute.

Is the correct file storing the application file specified?

No. 200

[Message]: Illegal contents of initialization file

[Description]: There is a problem in the initialization file (Flash5.ini).
Check the following:
Was the on-board writing program forcibly terminated immediately pri
this?
Do any application files conflict with the initialization file?
If the on-board writing program was forcibly terminated immediately p
the execution of the initialization file, the contents of the initialization f
have been damaged. The settings that have been saved in the initializat
also have been lost.
When the initialization file is deleted, the on-board writing program ca
restarted. The initialization file is under the Windows directory.
If any application files conflict with the initialization file, move the offe
application to another host computer.

No. 201

[Message]: Initialization file write was failed.

[Description]: An error occurred while the initialization file (Flash5.ini) was being wr
Check that free space exists on the host computer disk. The initializatio
in the Windows directory. Check if free space exists in the Windows
directory. If there are no problems, the host computer may be operating
incorrectly.

or a file with the same name in a different directory may be read, depen
on the current directory.

No. 301

[Message]: Illegal contents of information file

[Description]: Something is wrong with the information file (INF file).

No. 302

[Message]: Information file: Incorrect specification of Baud

[Description]: Specify one of the following Baud rates for the information file (INF fi

2,400, 4,800, 9,600, 19,200, 38,400, 56,000, 57,600, or 115,200

The value specified is the bit rate to start adjusting the bit rate in boot m
For details on the product type and value to be specified, refer to the att

No. 303

[Message]: Information file: Incorrect specification of Byte

[Description]: There is an error in the **Byte** specification format or **Byte** has been spe
than once in the information file (INF file). The **Byte** specification indic
in bytes of the application program to be transferred to flash memory fr
computer by executing the writing program.

No. 304

[Message]: Information file: Incorrect specification of Sumcheck

[Description]: There is an error in the **Sumcheck** specification format or **Sumcheck** h
specified more than once in the information file (INF file). The **Sumche**
specification indicates that calculation of the checksum for the contents
memory by the writing program is enabled.

[Message]: Information file: Incorrect specification of ModeInput

[Description]: There is an error in the **ModeInput** specification format in the informati
(INF file). The **ModeInput** specification indicates the frequency range o
clock (crystal oscillator). It indicates the frequency range for each clock r

No. 307

[Message]: Information file: Incorrect specification of Clock

[Description]: There is an error in the **Clock** specification format or **Clock** has been spe
more than once in the information file (INF file). The **Clock** specificatio
the frequency range of the system clock.

No. 308

[Message]: Information file: Incorrect specification of Ratio

[Description]: There is an error in the **Ratio** specification format or **Ratio** has been spe
than once of the information file (INF file). The **Ratio** specification indic
ratio of the system clock frequency to the input clock frequency.

No. 309

[Message]: Information file: Incorrect specification of ModeRatio

[Description]: There is an error in the **ModeRatio** specification format or **ModeRatio** l
specified more than once in the information file (INF file). The **ModeRa**
specification indicates the ratio of the system clock frequency to the inpu
frequency. It indicates the frequency ratio of each clock mode.

[Message]: Information file: Incorrect specification of Ratio*N*

[Description]: There is an error in the **RatioN** specification format or **RatioN** has beer
more than once of the information file (INF file). It indicates the clock f
ratio of the system clock to the input clock. It indicates the frequency ra
clock mode.

No. 312

[Message]: Information file: Incorrect specification of ModeRatio*N*

[Description]: There is an error in the **ModeRatioN** specification format of the inform
(INF file). The **ModeRatioN** specification indicates the clock frequency
system clock to the input clock. It indicates the frequency ratio of each

No. 313

[Message]: Information file: Incorrect specification of Clock*N*/Ratio*N*/ModeRatio*N*

[Description]: There is an error in the **ClockN/RatioN/ModeRatioN** specification in t
information file (INF file). The value of N must be 0 or 1.

No. 314

[Message]: Information file: Incorrect specification of address

[Description]: There is an error in the address specification of the information file (IN
Address specifications are used to indicate the start and end addresses o
be erased and the area which the writing program loads to. An address r
specified as 8 hexadecimal digits. Also, there must be one line to specif
address and one line to specify the end address.

[Description]: The address specification in the information file (INF file) is contradicto
the address specification.

No. 317

[Message]: Information file: Contradictory specification of clock mode.

[Description]: The clock mode specification in the information file (INF file) is contra
Check the clock mode specification.

No. 400

[Message]: No writing program was found.

[Description]: The writing program (SUB file) could not be found.
Check the following:
Is the correct microcomputer selected (information file specified)?
Was installation completed correctly?
The file (SUB file) storing the writing program must have the same body
as the information file (INF file) and must be in the same directory.

No. 401

[Message]: Writing program read was failed.

[Description]: An error occurred while reading the writing program (SUB file).
Check the following:
Is the correct microcomputer selected (information file specified)?
Was installation completed correctly?
The file (SUB file) storing the writing program must have the same body
as the information file (INF file) and must be in the same directory.
If there are no problems with installation, the host computer may be oper
incorrectly.

[Description]: The load address or size of the writing program contradicts the specific
information file. Check the following.
Is the correct microcomputer selected?
Are the information file (INF file) contents correct?
Is the writing program (SUB file) correct?

No. 500

[Message]: No specified file was found.

[Description]: Could not find the file storing the application program.
Check that the file name is correct. If only the file name or a relative pa
specified, the file may not be found or a file with the same name in a di
directory may be read, depending on the current directory.

No. 501

[Message]: Specified file read was failed.

[Description]: An error occurred while reading the file that stores the application prog
that the file name is correct. If only the file name or a relative path is sp
file may not be found or a file with the same name in a different directo
read depending on the current directory. If there are no problems with th
host computer may be operating incorrectly.

No. 502

[Message]: Specified file is not S-type load module.

[Description]: The application program must be an S-type load module.

[Description]: Select the serial port for the host computer.

No. 602

[Message]: No time out is specified.

[Description]: Specify a timeout value. This value is used to set the maximum period w
microcomputer remains unresponsive to the user. The timeout value can
value between 1 to 300 seconds. 5 seconds is a typical setting.

No. 603

[Message]: Input clock frequency was illegally specified.

[Description]: Enter the frequency as an integer or an integer with a decimal fraction (e
14.7456). The user can enter up to nine digits including the digits after th
point.

No. 604

[Message]: Input clock is out of the range of microcomputer operation.

[Description]: Check that the setting of the input clock is correct.

No. 605

[Message]: Clock is out of the range of microcomputer operation.

[Description]: Check that the settings of the input clock and frequency ratio are correct

No. 606

[Message]: Clock “CKM” is out of the range of microcomputer operation.

[Description]: Check that the settings of the input clock and frequency ratio (CKM) are

[Description]: Certain bit rates cannot be set because of the clock frequency. Since the
bit rate for the specified clock frequency and bit rate exceeds 4%, the or
writing program will not be able to perform communication correctly. S
rate so that the error is within ±3%. For details, refer to the hardware ma

No. 609

[Message]: Time out setting is illegal.

[Description]: Enter an integer. The user can set any time between 1 and 300 s, but 5 s
suitable.

No. 610

[Message]: Serial port could not use.

[Description]: The requested serial port on the host computer could not be opened. Ch
possible to use the specified serial port. On some host computers, COM
available.

No. 700

[Message]: No file name is specified.

[Description]: Input the S-type load module file name in which the application progra
stored.

No. 701

[Message]: No start address is specified.

[Description]: Specify the start address of the flash memory to which the application p
should be written.

[Description]: Specify an offset. The offset is added to the address of S-type load modu

No. 704

[Message]: No specified file was found.

[Description]: Could not find the file specified as storing the application program. Chec
file name is correct. If only the file name or a relative path has been spec
file may exist but may not be found, or a file with the same name in a dif
directory may be read, depending on the current directory.

No. 705

[Message]: Start address is illegally specified.

[Description]: Specify the flash memory address in hexadecimal and in up to eight digi

No. 706

[Message]: End address is illegally specified.

[Description]: Specify the flash memory address in hexadecimal and in up to eight digi

No. 707

[Message]: Offset is illegally specified.

[Description]: Specify in hexadecimal and in up to eight digits.

No. 708

[Message]: Start address is larger than end address.

[Description]: Check and correct the specifications of the start and end addresses.

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