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# M3S-UFLA32R

User's Manual

# UART Flash Memory Programming Utility

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#### 1. Overview

This user's manual is intended to provide explanations about system configuration and operation method of the UART Flash Memory Programming Utility M3S-UFLA32R Ver.1.40 (hereinafter referred to as M3S-UFLA32R) for the M32R/ECU Series (Refer to the Table 2.3.1 for corresponding MCU).

## 2. System Configuration

Figure 2.1.1 shows connection configuration of the system using the M3S-UFLA32R



Figure 2.1.1 Connection Configuration

#### 2.1 Outline of the M3S-UFLA32R

The M3S-UFLA32R is a Windows application program that performs UART communication with SIO1 of a MCU serial interface by the boot program built into a MCU (flash programming firmware) and executes write/erase operation to the MCU flash memory.



#### 2.2 Communication Cable (M3A-2145G50)

Communication cable consists of two different cables below.

• Interface Cable (M3A-2145G02)

It is a conversion cable to connect to the test pins on the target when the connection cable for the MF-TEN-NINE can not be mounted on the target board. Figure 2.2.1 shows connecting diagram. • MF-TEN-NINE Cable (M3A-0652CBL)

It is a cable to connect host PC to target board. Figure 2.2.2 shows connecting diagram.

Communication cable receives power supply from the target board. The power supply voltage can be used at 3.3V or 5.0V.

Table 2.2.1 shows usage specification of the communication cable.



Figure 2.2.1 Interface Cable Connecting Diagram



#### M3S-UFLA32R UART Flash Memory Programming Utility



Figure 2.2.2 MF-TEN-NINE Cable Connecting Diagram



#### Table 2.2.1 Usage Specification

Paramotor	Rate	d Value	Linit	Condition
Faiametei	MIN	MAX	Unit	Condition
	3.0	3.6	V	Target Supply Voltage
	4.5	5.5	V	Target Supply Voltage
RS-232C Communication Rate	9600	115200	bps	Communication Speed with PC
Consumption Current	-	60	mA	MAX3221EAE Specification
Operating Ambient Temperature	5	25	°C	No Condensation, No Corrosive Gas
Operating Ambient Temperature	5	35	C	Environment
Storage Ambient Temperature	0	60	°C	No Condensation, No Corrosive Gas
Slorage Ambient Temperature	0	00	C	Environment

#### 2.3 Target MCU/Target Board

Target MCU and Target Board should be prepared by the user. Table 2.3.1 lists the M3S-UFLA32R compatible MCUs and Target Boards.

Table 2.3.1 Target MCU and Target Bo	oard
--------------------------------------	------

Target MCU	Target Board Type Name	Starter Kit Type Name
32170/32174 Group	M3A-2114G02	M3A-2114G52, M3A-2114G52A
32171 Group	M3A-2114G12	M3A-2114G62, M3A-2114G62A
32172/32173 Group	M3A-2114G22	M3A-2114G72, M3A-2114G72A
32176 Group	M3A-2152G02	M3A-2152G52, M3A-2152G52A
32180 Group	M3A-2142G02	M3A-2142G52, M3A-2142G52A
32182 Group	M3A-2142G12	M3A-2142G62, M3A-2142G62A
32185/32186 Group	M3A-2154G02A	M3A-2154G52B
32192/32195/32196 Group	M3A-2154G02, M3A-2154G02A	M3A-2154G52A, M3A-2154G52B

#### 2.4 Host PC

Table 2.4.1 shows the system requirements of a host PC. Host PC should be prepared by the user.

#### Table 2.4.1 System Requirements of a Host PC

Host PC	IBM PC/AT and its Compatible Machine
08	Windows 2000
03	Windows XP
Communication Port	COM1

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#### 3. Installation of the M3S-UFLA32R

#### 3.1 Installation of the M3S-UFLA32R

To install the M3S-UFLA32R, perform the following steps.

- 1) Execute Setup.exe in "¥Eng¥Tool¥Ufla32r¥W95E" folder contained in the provided CD. (Note1)
- 2) Continue installation by following the instruction of the installation window.
- 3) Installation is completed when Setup Complete dialog appears.

Note 1: To use the file which is downloaded from our homepage, uncompress the file before execute Setup.exe. Note: Administrator authority is required to install software under Windows2000 and WindowsXP.



#### 4. Operation Method of the M3S-UFLA32R

#### 4.1 Startup

Double-click the icon after the M3S-UFLA32R setup is completed.

#### 4.2 Exit

Choose  $[Exit(\underline{X})]$  from  $[File(\underline{F})]$  menu.

#### 4.3 Operation Outline of the M3S-UFLA32R

To write to the flash memory, perform the following steps.

#### 1) Connecting Host PC to Target Board

- Connect D-Sub 9 pin connector of the MF-TEN-NINE cable to COM1 of the host PC.
- Connect MF-TEN-NINE cable to the interface cable.
- Connect IC clip of the interface cable to the target board by referring to Table 4.3.1.



Figure 4.3.1 Connection Diagram

#### Table 4.3.1 Connecting Interface Cable to the Target Board

Interface Cable		Destination of the Target Reard Connection	
IC Clip Color	IC Clip Pin Name		
Red	VCC	VCCE power supply	
Blue	SCLK	P87 pin	
Yellow	RXD	P86 pin (RXD1)	
Black	GND	GND pin	
Green	TXD	P85 pin (TXD1)	

#### 2) Setting for FP Pin, MOD0 Pin, and MOD1 Pin

Set FP pin of the target board to "H," MOD0 pin to "H," and MOD1 pin to "L," respectively. For setting procedure, refer to respective board manuals.

#### 3) Power to the Target Board

Start power supply to the target board.



- 4) Reset the Target MCU Reset the target MCU by pressing the reset switch on the target board.
- 5) Starting the M3S-UFLA32R Start the M3S-UFLA32R.
- 6) Execution of Writing to the Flash Memory by the M3S-UFLA32R Operate the M3S-UFLA32R and perform writing to the flash memory. For detail about operation method, refer to "5. Function Description of the M3S-UFLA32R."

Note: During erasing or writing, it is prohibited to reset the target board and to turn off the power.

- 7) Exit the M3S-UFLA32R Exit the M3S-UFLA32R.
- 8) Power off the Target Board

Cut the power supply to the target board.



# 5. Function Description of the M3S-UFLA32R

#### 5.1 Function List

Table 5.1 lists functions of the M3S-UFLA32R. Choose each function from menu or click a button for execution.

Table 5.1 Function List	Table	5.1	Function	List
-------------------------	-------	-----	----------	------

	Menu	Button	Function	Reference
File	Load	Refer	Read the program data of specified Motorola S format file into the internal buffer	5.2
	Exit	-	Exit the M3S-UFLA32R	5.3
Display	Lock Bit Information	-	Display lock bit information	5.4
Device	Program	Program	Write program data from internal buffer to the flash memory	5.5
	Erase	Erase	Erase all blocks from the flash memory	5.6
	Block Erase	-	Erase the specified blocks from the flash memory	5.7
	Lock Bit / Set	-	Write lock bit to the specified blocks in the flash memory	5.8
	Lock Bit / Enable	-	Enable memory protect by the lock bit	5.9
	Lock Bit / Disable	-	Disable memory protect by the lock bit	5.10
	Blank Check	Blank Check	Check if all the flash memory blocks are erased	5.11
	Verify Check	Verify Check	Check if the program data of internal buffer and the program data written to the flash memory are corresponding	5.12
	Batch processing / E.B.P.V.	E.B.P.V.	Consecutively execute Erase, Blank Check, Program, and Verify Check	5.13
	Batch processing / E.P.	E.P.	Consecutively execute Erase and Program	5.14
	Batch processing / B.P.V.	B.P.V.	Consecutively execute Blank Check, Program, and Verify Check	5.15
Others	Setting	-	Perform MCU selection, Verify method selection, and ID code write control	5.16
	ID Code Setting	-	Set the ID code to be used at ID verification	5.17
Help	Version information	-	Display the versions of the M3S-UFLA32R and F/W	5.18



- 5.2 Program Data (Motorola S-format file) Selection
  - (1) Choose  $[Load(\underline{L})]$  from  $[File(\underline{F})]$  menu or click [Refer] button.

≰ UFLA32R File( <u>F)</u> Display( <u>V</u> )	Device( <u>D</u> ) Others( <u>O</u> )	Help( <u>H</u> )			
Load(_) Exit⊗ Alt+F4 M32R/ECU (M32192F8) Motorola S-format file					
File Name:					
Blank Check	Erase	Program	n Verify Check		
E.P.	B.F	P.V.	E.B.P.V.		

Figure 5.2.1 Program Data Selection

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- (2) When "Open File" dialog opens, choose a program data file (Motorola S-format file) and then click [Open(<u>O</u>)] button.
  - Note: As a file format, the M3S-UFLA32R supports Motorola S-format only.

Look in: 192tio 🗣 🖻 📽 📰 -	Open			? ×
File name:       TIO0_pwm.mot         Files of type:       Motorola S-format (".mot)	Look in: 🗀	192tio	💌 🗢 🗈 📥	
File name: TIO0_pwm.mot   Files of type: Motorola S-format (*.mot)     Cancel	TIO0_pwm	.mot		
File name:       TI00_pwm.mot       Open         Files of type:       Motorola S-format (*.mot)       Cancel				
File name:     TIO0_pwm.mot       Dpen       Files of type:     Motorola S-format (*.mot)				
File name:     TIO0_pwm.mot       Dpen       Files of type:     Motorola S-format (*.mot)				
File name:     TIO0_pwm.mot       Dpen       Files of type:     Motorola S-format (*.mot)       Cancel				
Files of type: Motorola S-format (*.mot)	File <u>n</u> ame:	TIO0_pwm.mot		en
	Files of type:	Motorola S-format (*.mot)	- Can	
	· · · · · · · · · · · · · · · · · · ·	Therefore a result ( most)		<i>li</i> .

Figure 5.2.2 Open File Dialog

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(3) Choose a file to display the dialog that shows execution process, and then read program data file into the internal buffer. After completing read, the dialog is closed and file name is displayed in "File Name:" box.

<mark>≰</mark> UFLA32R File( <u>F</u> ) Display( <u>V</u> )	Device( <u>D</u> ) Others(O	) Help( <u>H</u> )	×			
Tare	et Mcu Type	R/ECU (M321)	92F8)			
Motorola S-format file         File Name:       C:¥work¥test¥TIO_PWM¥192tio¥TIO0_pwm.mot         Refer···						
Blank Check	Blank Check Erase Program Verify Check					
E.P.	B.	P.V.	E.B.P.V.			

Figure 5.2.3 Result of Choosing Program Data

#### 5.3 Exit the Application

(1) Choose [Exit(X)] from [File(F)] menu to exit the program. Also, it is able to exit the program by pushing [Alt + F4] keys or clicking the close button.

↓ UFLA32R File(F) Display(V) Load(L)	Device( <u>D</u> ) Others( <u>O</u> )	) Help( <u>H</u> )				
Exit⊗ Alt+F4	Exit Alt+F4 M32R/ECU (M32192F8)					
- Motorola S-format f File Name: C:¥wor	Motorola S-format file File Name: C:¥work¥test¥TIO_PWM¥192tio¥TIO0_pwm.mot					
Blank Check	Erase	Program	n Verify Check			
E.P.	B.f	P.V.	E.B.P.V.			

Figure 5.3.1 Exit the Application





#### 5.4 Lock Bit Information

(1) Choose [Lock Bit Information (L)] from [Display(V)] menu to display the dialog that shows execution process, and then read lock bit. After completing read of lock bit, the dialog is closed and "Lock Bit Status Display" dialog is displayed.

Lock Bit Information ()         M32R/ECU (M32192F8)         Motorola S-format file         File Name: C:¥work¥test¥TIO_PWM¥192tio¥TIO0_pwm.mot         Blank Check       Erase         Program       Verify Check         E.P.       B.P.V.         E.P.       B.P.V.	<mark>≰ UFLA32R</mark> File( <u>F)</u> Display( <u>V)</u> [	)evice( <u>D</u> ) Others( <u>O</u>	) Help( <u>H</u> )	>
Blank Check     Erase     Program     Verify Check       E.P.     B.P.V.     E.B.P.V.	Motorola S-format fi File Name: C¥wor	rmation (L) M32 le k¥test¥TIO_PWM¥192	R/ECU (M3219 tio¥TIO0_pwm.1	92F8) mot
E.P. B.P.V. E.B.P.V.	Blank Check	Erase	Program	n Verify Check
	E.P.	B.I	P.V.	E.B.P.V.

#### Figure 5.4.1 Lock Bit Information

(2) Click [Cancel] while reading out lock bit status to close the dialog that shows execution process.

Target Mcu Type   UFLA32R   Getting Lock Bit Information   Motorola   File Nat   Blank Check   Erase   Program   Verify Check   E.P.   B.P.V.   E.P.	<b>≰</b> UFLA32R File( <u>F</u> ) Display( <u>V</u> )	Device( <u>D</u> ) Others(O	) Help( <u>H</u> )	X
Blank Check     Erase     Program     Verify Check       E.P.     B.P.V.     E.B.P.V.	Motorola File Nar	et Mcu Type : Lock Bit Information	ancel	60%
E.P. B.P.V. E.B.P.V.	Blank Check	Erase	Program	n Verify Check
	E.P.	B.I	P.V.	E.B.P.V.

Figure 5.4.2 Reading out Lock Bit Status



(3) In [Lock Bit Status Display] dialog, the lock bit statuses of all blocks of currently selected MCU are displayed. Click [OK] to close "Lock Bit Status Display" dialog.



Figure 5.4.3 Lock Bit Status Display Dialog



#### 5.5 Program

(1) Choose [Program(<u>P</u>)] from [Device(<u>D</u>)] menu or click [Program] button to display the dialog that shows execution process, and then write program data stored in the internal buffer to the flash memory. After completing write of program data, the dialog is closed and "Program ...finish" dialog is displayed.

🤹 UFLA32R File(E) Display(⊻) 🗌	Device( <u>D</u> ) Others( <u>C</u>	) Help( <u>H</u> )		[
Motorola S-format File Name: C:¥w	Program(P) Erase(E) Block Erase(L) Lock Bit Blank Check(B) Verify Check(V) Batch processing	<ul> <li>▶ 'ECU (M3219)</li> <li>▶ a¥TIO0_pwm.</li> </ul>	92F8) mot	,
Blank Check	Erase	Program	n Verify Check	
E.P.	B.	P.V.	E.B.P.V.	



(2) Click [OK] in the "Program...finish" dialog to close the dialog

<mark>≰ UFLA32R</mark> File( <u>F)</u> Display( <u>V</u> ) Device	e(D) Others(O) Help(H)	
Target Mcu	i Type M32R/ECU (M3219	92F8)
Motorola S-format file –	JFLA32R [ Program · · · finis	sh Refer…
Blank Check	Erase Program	n Verify Check
E.P.	B.P.V.	E.B.P.V.

Figure 5.5.2 Program Finish Dialog



#### 5.6 Erase

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(1) Choose [Erase(<u>E</u>)] from [Device(<u>D</u>)] menu or click [Erase] button to display the dialog that shows execution process, and then erase the flash memory. After completing the flash memory erasing, the dialog is closed and "Erase ...finish" dialog is displayed.

Tar       Program(P)         Erase(E)       Block Erase(L)         Block Erase(L)       Lock Bit         Lock Bit       +         Blank Check (B)       Verify Check (V)         File Name:       C.¥w         Batch processing       •         ¥TIO0_pwm.mot       Refer         Blank Check       Erase         Program       Verify Check         E.P.       B.P.V.         E.P.       B.P.V.	<mark>≰ UFLA32R</mark> File( <u>F)</u> Display( <u>V</u> )	Device(D) Others(O)	Help( <u>H</u> )	
Blank Check     Erase     Program     Verify Check       E.P.     B.P.V.     E.B.P.V.	Motorola S-format File Name: C:¥w	Program(P) Erase(E) Block Erase(L) Lock Bit Blank Check(B) Verify Check(V) Batch processing	ECU (M32192F	8) t Refer···
E.P. B.P.V. E.B.P.V.	Blank Check	Erase	Program	Verify Check
	E.P.	B.P.	V.	E.B.P.V.



(2) Click [OK] in the "Erase...finish" dialog to close the dialog.

🤹 UFLA32R File(E) Display(⊻) [	Device(D) Others(O) Help( <u>H</u> )	<u> </u>
Targe	et Mou Type	92F8)
File Name: C:¥wor	ile - UFLA32R	not Refer····
Blank Check	Erase Program	n Verify Check
E.P.	B.P.V.	E.B.P.V.

Figure 5.6.2 Erase Finish Dialog

#### 5.7 Block Erase

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(1) Choose [Block Erase(L)] from [Device(D)] menu to display "Block Erase" dialog.

↓ UFLA32R	
File(F) Display(V)	Device(D)       Others(O)       Help(H)         Program(P)       Erase(E)         Block Erase(L)       (ECU (M32192F8))         Lock Bit       •         Blank Check(B)       •         Verify Check(V)       •         Batch processing       •         ¥TI00_pwm.mot       Refer
Blank Check	Erase Program Verify Check
E.P.	B.P.V. E.B.P.V.

Figure 5.7.1 Block Erase

(2) In "Block Erase" dialog, all blocks of currently selected MCU are displayed. Click [Select All] to select all blocks.

Click [Clear] button to clear all selected blocks.

Select the blocks you wish to erase and click [OK] to close "Block Erase" dialog. Subsequently, the dialog that shows execution process appears and the selected blocks are erased. After completing erasing, the dialog is closed and "Block Erase ...finish" dialog is displayed. Click [Cancel] to close "Block Erase" dialog.

	Device( <u>D</u> ) Others(	) Help( <u>H</u> )	X
Motorol File Na Blan	table Block k0 (H'000000 - H'001F k1 (H'002000 - H'002F k2 (H'003000 - H'003F k3 (H'004000 - H'00FF k4 (H'008000 - H'07FF k5 (H'010000 - H'07FF k6 (H'020000 - H'03FF k7 (H'030000 - H'04FF k9 (H'050000 - H'05FF k10 (H'060000 - H'06FF Select All	FFF) FFF) FFF) FFF) FFF) FFF) FFF) FFF) FFF) FFF) FFF) FFF) FFF) FFF)	Cancel

Figure 5.7.2 Block Erase Dialog



(3) Click [OK] in the "Block Erase...finish" dialog to close the dialog.

↓ UFLA32R File(E) Display(V)	Device( <u>D</u> ) Others( <u>O</u> ) Help( <u>H</u> )	
Targe	et Mcu Type M32R/ECU (M3219)	2F8)
Motorola S-format f File Name: C:¥wor	ile UFLA32R rk¥ (1) Block Erase ··· fi	nish Refer
Blank Check	Erase Program	Verify Check
E.P.	B.P.V.	E.B.P.V.

Figure 5.7.3 Block Erase Finish Dialog

#### 5.8 Lock Bit/Set

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(1) Choose [Lock Bit]-[Set(S)] from [Device(D)] menu to display the dialog that shows execution process, and then read out lock bit. After completing read of lock bit, the dialog is closed and "Lock Bit Set" dialog is displayed.

Tar       Program(P)         Erase(E)       Block Erase(L)         Block Erase(L)       ECU (M32192F8)         Motorola S-format       Set(S)         Blank Check (B)       Verify Check (V)         File Name:       C:¥w         Batch processing       P#TIOU_pwm.mot         Refer       Refer         Blank Check       Erase         Program       Verify Check         E.P.       B.P.V.         E.P.       B.P.V.	≰ UFLA32R File( <u>F</u> ) Display( <u>V</u> )	Device( <u>D</u> ) Others( <u>O</u> )	Help( <u>H</u> )	
Blank Check     Erase     Program     Verify Check       E.P.     B.P.V.     E.B.P.V.	Motorola S-format File Name: C¥w	Program(P) Erase(E) Block Erase(L) Lock Bit Blank Check(B) Verify Check(V) Batch processing	ECU (M32192Fi Set(S) Enable(E) Disable(D) ¥1100_pwm.mot	8) Refer···
E.P. B.P.V. E.B.P.V.	Blank Check	Erase	Program	Verify Check
	E.P.	B.P.V		E.B.P.V.

Figure 5.8.1 Lock Bit Set

Note: To clear lock bit, perform the following steps.

Execute [Lock Bit]-[Disable(D)] in [Device(D)] menu.
 Execute [Erase(E)] or [Block Erase(L)] in [Device(D)] menu.

By following the procedures above, lock bit in the corresponding block can be cleared. This is the only way to clear lock bit.



- (2) In "Lock Bit Set" dialog, the blocks without setting of lock bit are displayed.
  - Click [Select All] to select all blocks.

Click [Clear] to clear all selected blocks.

Select the blocks you wish to set lock bit to, and then click [OK] to close "Lock Bit Set" dialog. Subsequently, the dialog that shows execution process appears and the lock bit is set. After completing setting, the dialog is closed and "Lock Bit Set ...finish" dialog is displayed. Click [Cancel] to close "Lock Bit Set" dialog.

F	Block0         H'001FFF)           Block0         H'002000 - H'001FFF)           Block1         H'002000 - H'002FFF)           Block2         H'003000 - H'003FFF)           Block3         H'004000 - H'007FFF)           Block5         H'010000 - H'007FFF)           Block5         H'010000 - H'007FFF)           Block6         H'020000 - H'007FFF)           Block5         H'010000 - H'01FFFF)           Block6         H'020000 - H'02FFFF)           Block6         H'030000 - H'03FFFF)           Block9         H'050000 - H'03FFFF)           Block9         H'050000 - H'05FFFF)           Block10         H'06FFFFF)           Block10         H'06FFFFF)	Cancel
	Select All Clear	

#### Figure 5.8.2 Lock Bit Set Dialog

(3) Click [OK] in the "Lock Bit Set...finish" dialog to close the dialog.

🤹 UFLA32R File(E) Display(⊻) D	)evice( <u>D</u> ) Others( <u>O</u> ) Help( <u>H</u> )	
Targe	t Mcu Type M32R/ECU (M32192F)	8)
- Motorola S-format fi File Name: C:¥work	k UFLA32R ▷ k ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	n Refer···
Blank Check	Erase Program	Verify Check
E.P.	B.P.V.	E.B.P.V.

Figure 5.8.3 Lock Bit Set Finish Dialog



#### 5.9 Lock Bit/Enable

(1) Choose [Lock Bit]-[Enable(<u>E</u>)] from [Device(<u>D</u>)] menu to display the dialog that shows execution process, and then enable lock bit. After completing enabling lock bit, the dialog is closed and "Lock Bit Enable...finish" dialog is displayed.

& UFLA32R File(E) Display(∑)	Device(D) Others(O) Help(H)	
Motorola S-format File Name: C¥w	Program(P) Erase(E) Block Erase(L) Lock Bit Blank Check(B) Verify Check(V) Batch processing	8) Refer···
Blank Check	Erase Program	Verify Check
E.P.	B.P.V.	E.B.P.V.

#### Figure 5.9.1 Lock Bit Enable

(2) Click [OK] in the "Lock Bit Enable...finish" dialog to close the dialog.

💰 UFLA32R File(E) Display(V) !	Device( <u>D</u> ) Others( <u>O</u> ) Help( <u>H</u> )	
Targe	et Mcu Type	32192F8)
File Name: C¥wor	UFLA32R Lock Bit Enable ··	• finish
Blank Check	Erase Prog	gram Verify Check
E.P.	B.P.V.	E.B.P.V.

Figure 5.9.2 Lock Bit Enable Finish Dialog

Note: It can not perform erase or write operation against the block with the lock bit that is enabled and set. Clear lock bit to perform erase or write operation. After powering, lock bit becomes enabled.



#### 5.10 Lock Bit/Disable

(1) Choose [Lock Bit]-[Disable(<u>D</u>)] from [Device(<u>D</u>)] menu to display the dialog that shows execution process, and then disable lock bit. After completing disabling lock bit, the dialog is closed and "Lock Bit Disable...finish" dialog is displayed.

Tar       Program(P)         Erase(E)       Block Erase(L)         Block Erase(L)       ECU (M32192F8)         Motorola S-format       Set(S)         Blank Check (B)       Verify Check (V)         File Name:       C:¥w         Batch processing       P#1100_pwm.mot         Blank Check       Erase         Program       Verify Check         E.P.       B.P.V.         E.P.       B.P.V.		Device(D) Others(O)	Help(H)	
Blank Check     Erase     Program     Verify Check       E.P.     B.P.V.     E.B.P.V.	Motorola S-format File Name: C¥w	Program( <u>P</u> ) Erase( <u>E</u> ) Block Erase( <u>L</u> ) Lock Bit Blank Check( <u>B</u> ) Verify Check( <u>V</u> ) Batch processing	(ECU (M32192F Set(S) Enable(E) Disable(D) p+1100_pwm.mo	Refer
E.P. B.P.V. E.B.P.V.	Blank Check	Erase	Program	Verify Check
	E.P.	B.P.V	<i>I.</i>	E.B.P.V.



(2) Click [OK] in the "Lock Bit Disable...finish" dialog to close the dialog.

Sile( <u>F</u> )	32R Display(⊻)	Device( <u>D</u> )	Others( <u>O</u> )	Help( <u>H</u> )		>	<
		get Mcu Typ	e	/ECU (M321	92F8)		
File	rola S-format Name: C:¥wo		Lock Bit I	Disable ····	<b>x</b> finish	Refer····	
B	lank Check	Er	ase	Progra	m	Verify Check	
	E.P.		B.P.	<i>I</i>		E.B.P.V.	

Figure 5.10.2 Lock Bit Disable Finish Dialog

#### 5.11 Blank Check

**KENESAS** 

(1) Choose [Blank Check(<u>B</u>)] from [Device(<u>D</u>)] menu or click [Blank Check] button to display the dialog that shows execution process, and then perform blank check operation. After completing blank check, the dialog is closed and "Blank Check...finish" dialog is displayed.

<mark>≰ UFLA:</mark> File( <u>F</u> )	32R Display(⊻) [	Device( <u>D</u> )	Others( <u>O</u> )	Help( <u>H</u> )		<u> </u>
	Tar	Program( Erase( <u>E</u> ) Block Era Lock Bit	(P) ase(L)	ECU (M3219	92F8)	
File N	ola S-format Name: C:¥w	Blank Ch Verify Cł Batch pro	neck ( <u>B</u> ) heck (⊻) ocessing I	)¥TIO0_pwm.	mot	Refer····
Bla	ank Check	Era	ase	Program	n	Verify Check
	E.P.		B.P	.V.	E	.B.P.V.



(2) Click [OK] in the "Blank Check...finish" dialog to close the dialog.

🤹 UFLA32R File(E) Display(V)	Device( <u>D</u> ) Others( <u>O</u> )	Help( <u>H</u> )	
Targ	et Mcu Type M32R/I	ECU (M32192F8)	
File Name: C:¥wo	file UFLA32R rk i Blank Ch	eck ···· finish	Refer····
Blank Check	Erase	Program	Verify Check
E.P.	B.P.V.		E.B.P.V.
]			

Figure 5.11.2 Blank Check Finish Dialog

#### 5.12 Verify Check

**CENESAS** 

- (1) Choose [Verify Check(V)] from [Device(D)] menu or click [Verify Check] button to display the dialog that shows execution process, and then perform verify check operation. After completing verify check, the dialog is closed and "Verify Check...finish" dialog is displayed.
  - Note: When [Sum check (high speed)] is chosen from [Verify Process (V)] in [Others (O)]-[Setting(S)] dialog, the data in the MCU is compared to the check sum value of the program data file. When [Read array (high reliability)] is selected, the data in the MCU is compared to the program data file by the byte.

File(E) Display(V) Device(D) Others(Q) Help(H)	1
Tar       Program(P)         Erase(E)       Block Erase(L)         Lock Bit       Lock Bit         Blank Check(B)       Verify Check(V)         File Name:       C:¥w         Batch processing       V¥TIO0_pwm.mot	
Blank Check Erase Program Verify Check	
E.P. B.P.V. E.B.P.V.	

#### Figure 5.12.1 Verify Check

(2) Click [OK] in the "Verify Check...finish" dialog box to close the dialog.

M32R/ECU (M32192F8)
Motorola S-format file     UFLA32R       File Name:     C:¥work¥       Verify Check ··· finish
Blank Check Erase Program Verify Check
E.P. B.P.V. E.B.P.V.

Figure 5.12.2 Verify Check Finish Dialog



#### 5.13 E.B.P.V. (Erase, Blank Check, Program, Verify Check)

(1) Choose [Batch Processing]-[E.B.P.V.] from [Device(<u>D</u>)] menu or click [E.B.P.V.] button to consecutively execute "Erase," "Blank Check," "Program," and "Verify Check."

↓       UFLA32R         File(E)       Display(V)         ↓       Tar         ↓       ● </th <th>Device(<u>D)</u> Others(<u>Q</u>) Program(<u>P</u>) Erase(<u>E</u>) Block Erase(<u>L</u>) Lock Bit Blank Check(<u>B</u>) Verify Check(<u>V</u>) Batch processing</th> <th>Help(<u>H</u>)</th> <th>02F8)</th> <th>Refer</th>	Device( <u>D)</u> Others( <u>Q</u> ) Program( <u>P</u> ) Erase( <u>E</u> ) Block Erase( <u>L</u> ) Lock Bit Blank Check( <u>B</u> ) Verify Check( <u>V</u> ) Batch processing	Help( <u>H</u> )	02F8)	Refer
Blank Check	Erase	B.P.V. Program	n	Verify Check
E.P.	B.f	P.V.		E.B.P.V.

Figure 5.13.1 E.B.P.V.

Г

#### 5.14 E.P. (Erase, Program)

(1) Choose [Batch Processing]-[E.P.] from [Device(<u>D</u>)] menu or click [E.P.] button to consecutively execute "Erase" and "Program."

↓ UFLA32R File(F) Display(V)	Device(D) Others(O)	Help(H)	×	1
Motorola S-format	Program(P) Erase(E) Block Erase(L) Lock Bit Blank Check(B) Verify Check(V)	ECU (M3215	92F8)	-
File Name: C:¥w	Batch processing	E.B.P.V. E.P.	pt Refer···	
		B.P.V.		
Blank Check	Erase	Program	n Verify Check	
E.P.	B.P	.V.	E.B.P.V.	

Figure 5.14.1 E.P.



## 5.15 B.P.V. (Blank Check, Program, Verify Check)

(1) Choose [Batch Processing]-[B.P.V.] from [Device(<u>D</u>)] menu or click [B.P.V.] button to consecutively execute "Blank Check," "Program," and "Verify Check."

Tar       Program(P)         Erase(E)       Block Erase(L)         Lock Bit       Blank Check (B)         Verify Check (V)       E.B.P.V.         File Name:       C¥w         Batch processing       E.B.P.V.         Blank Check       Erase         Program       Verify Check         Blank Check       Erase         Program       Verify Check	& UFLA32R File(E) Display(V)	Device( <u>D)</u> Others( <u>O</u> )	Help( <u>H</u> )	
File Name:       C:¥w       Batch processing       E.B.P.V.         E.P.       B.P.V.         Blank Check       Erase       Program         Verify Check	Motorola S-format	Program(P) Erase(E) Block Erase(L) Lock Bit I Blank Check(B) Verify Check(V)	ECU (M32192	F8)
Blank Check Erase Program Verify Check	File Name: C¥w	Batch processing	E.B.P.V. E.P.	pt Refer····
	Blank Check	Erase	B.P.V. Program	Verify Check
E.F. D.F.V. E.D.F.V.	E.P.	B.P	.v.	E.B.P.V.

Figure 5.15.1 B.P.V.



#### 5.16 Setting

(1) Choose [Setting(<u>S</u>)] from [Others(<u>O</u>)] menu to display "Setup" dialog.

↓ UFLA32R File( <u>F</u> ) Display( <u>V</u> )	Device( <u>D</u> ) Others( <u>O</u> ) Help( <u>H</u> )	
Targe	et Mcu Typy <mark>Setting(S)</mark> ID Code SettingΦ M32R/ECU (M3219	92F8)
File Name: C:¥wor	ile rk¥test¥TIO_PWM¥192tio¥TIOO_pwm.	mot Refer····
Blank Check	Erase Program	n Verify Check
E.P.	B.P.V.	E.B.P.V.

Figure 5.16.1 Setting



(2) In the "Setup" dialog, it is possible to choose MCU type, verify process, and write ID code into the ID code area.

It is possible to choose MCU from "Mcu Type( $\underline{M}$ )" pull-down menu.

It is possible to choose verify check process from "Verify process( $\underline{V}$ )."

Choose [Sum check (high speed)] to compare the data in MCU to the check sum value of the program data file.

Choose [Read array (high reliability)] to compare the data in MCU to the program data file by the byte.

Choose [Permit to write ID code into Target MCU] to write data into ID code area of the MCU at the time of program. If it is not chosen, ID code area of the MCU is filled with FFh.

Write the data other than FFh into ID code area to enable protect function of the flash memory. When protect function is enabled, the ID code is verified before executing operation to the flash memory (erase or write). When the ID code is not corresponding as a result of verification, the operation to the flash memory is not available.

When the whole area of the ID code is filled with FFh, the ID code is not verified.

Note: At the time of the M3S-UFLA32R startup, previously chosen MCU is set to "MCU Type(<u>M</u>)". However, [Sum check (high speed)] is checked at "Verify process(<u>V</u>)" and [Permit to write ID code into Target MCU] is unchecked.

Click [OK] to enable the setting, and then close the "Setup" dialog. Click [Cancel] to disable the setting, and then close the "Setup" dialog.

File(F)       Display(W)       Device(W)       Others(W)       Help(H)         Image: Setup       Image: Setup       Image: Setup       Image: Setup       Image: Setup         Mot       Mot       Type(M)       Image: Setup       Image: Setup       Image: Setup         Mot       File       Mcu Type(M)       Image: Setup       I	File(F)       Display(W)       Device(W)       Others(W)       Help(H)         Image: Setup       Image: Setup       Image: Setup       Image: Setup       Image: Setup         Mot       File       Mcu Type(M)       Image: OK       Image: OK       Image: OK         Mot       File       M32R/ECU (M32192F8)       Image: OK       Image: OK       Image: OK         File       Verify process(V)       Image: OK       Image: OK       Image: OK       Image: OK         Image: OK       Sum check (high speed)       Image: Read array (high reliability)       Image: OK       Image: OK         Image: OK       Image: OK       Image: OK       Image: OK       Image: OK       Image: OK         Image: OK       Image: OK       Image: OK       Image: OK       Image: OK       Image: OK         Image: OK       Image: OK       Image: OK       Image: OK       Image: OK       Image: OK         Image: OK       Image: OK       Image: OK       Image: OK       Image: OK       Image: OK         Image: OK       Image: OK       Image: OK       Image: OK       Image: OK       Image: OK         Image: OK       Image: OK       Image: OK       Image: OK       Image: OK       Image: OK         Image: OK
Mot   File   Verify process (V)   • Sum check (high speed)   • Read array (high reliability)   • Permit to write ID code into Target MCU	Mot   File   Verify process(v)   • Sum check (high speed)   • Read array (high reliability)

Figure 5.16.2 Setup Dialog



#### 5.17 ID Code Setting

(1) Choose [ID Code Setting(<u>I</u>)] from [Others(<u>O</u>)] menu to display "ID code setting" dialog.

<i>≰</i> UFLA32R File( <u>F</u> ) Display( <u>V</u> )	Device( <u>D)</u> Others( <u>O)</u> Help	(H)	
	et Mcu Typ <mark>ID Code Setting(S)</mark> ID Code Setting M32R/ECU	<u>еФ</u> (М32192F8)	
File Name: C:¥wor	ile /k¥test¥TIO_PWM¥192tio¥TIOC	D_pwm.mot Refer	
Blank Check	Erase F	Program Verify Check	
E.P.	B.P.V.	E.B.P.V.	

Figure 5.17.1 ID Code Setting



- (2) In the "ID code setting" dialog, the ID code for verification is set.
  - Table 5.17.1 shows function list of operable and not operable functions according with the verify result.

Choose [Specify ID code by hexadecimal] to set the ID code by hexadecimal. Choose [Specify ID code by alphanumeric] to set the ID code by alphanumeric characters. Click [OK] to enable the setting, and then close the "ID code setting" dialog. Click [Cancel] to disable the setting, and then close the "ID code setting" dialog.

Note: In the 3218x Group and 3219x Group, 12-byte of the address H'84 to H'8F is enabled. In the other MCU, 16-byte of the address H'84 to H'93 is enabled.

<mark>≰ UFLA32R _ ▼</mark> File( <u>F</u> ) Display( <u>V</u> ) Device( <u>D</u> ) Others( <u>O</u> ) Help( <u>H</u> )
D code setting Specify ID code by hexadecimal H'84 - H'8B Address: FF

Figure 5.17.2 ID Code Setting Dialog

|--|

Function	ID code is corresponding or every ID code in the MCU is FFh	ID code is not corresponding
Load	YES	YES
Exit	YES	YES
Lock Bit Information	YES	NO
Program	YES	NO
Erase	YES	NO
Block Erase	YES	NO
Lock Bit / Set	YES	NO
Lock Bit / Enable	YES	NO
Lock Bit / Disable	YES	NO
Blank Check	YES	NO
Verify Check	YES	NO
Batch processing / E.B.P.V.	YES	NO
Batch processing / E.P.	YES	NO
Batch processing / B.P.V.	YES	NO
Setting	YES	YES
ID Code Setting	YES	YES
Version information	YES	YES

Note: YES: Operable, NO: Not operable



#### 5.18 Version Information

(1) Choose [Version information (UFLA32R) (<u>A</u>)] from [Help(<u>H</u>)] menu to display "Version information (UFLA32R)" dialog.

↓ UFLA32R File(F) Diselev(0.0)	Device (D) Others	(0)		×
File( <u>F</u> ) Display( <u>V</u> )	Device ( <u>D</u> ) Others			-
	rget Mcu Type ——— M	Version i 32R/ECU (M3219	nformation (UFLA32R) ( <u>A</u> ) 92F8)	
_ Motorola S-forma File Name:  C:¥⊭	t file vork¥test¥TIO_PWM¥	192tio¥TIO0_pwm.	mot Refer…	
Blank Check	Erase	Program	n Verify Check	
E.P.		B.P.V.	E.B.P.V.	

Figure 5.18.1 Version Information

(2) In the "Version information (UFLA32R)" dialog, the M3S-UFLA32R version and Flash E/W Firmware version in the MCU are displayed. Click [OK] to close the dialog.

	D) Others(O) Help(H)	_				
Target Mcu	Target Mcu Type					
Version information (UFLA32R)			x			
M32R/ECU Series F UFLA32R VER 1.4 Flash E/W Firmwa COPYRIGHT (C) 200 ALL RIGHTS RESEF	Flash E/W Utility are version : VER1.00 D5 RENESAS TECHNOLOGY RVED.	CORPORATION				
E.P.	B.P.V.	E.B.P.V.				

Figure 5.18.2 Version Information (UFLA32R) Dialog



# 6. Error Message List

Table 6.1.1 lists error messages, causes, and approaches provided from the M3S-UFLA32R.

Tabl	e o. i. i Litoi message List	_	
	Error Message	Cause	Approach
1	MCU information is incorrect.	There is no INI file.	Reinstall the M3S-UFLA32R.
	Please check whether the "UFLA32R.ini"		
_	file is installed correctly.		
2	Can not open COM1.	Can not open COM1.	other application.
3	Motorola file is not specified.	Motorola S format file is not	Specify the Motorola S format file.
	Please specify Motorola file.	specified.	
4	The specified file is not a S-format file.	The specified file is not Motorola	Check the contents of the
	Please specify S-format file (*.mot).	S-format file or there are some	selected file or specify different
		contents errors.	file.
5	Address Error.	The data record address of	Check the contents of Motorola S
	Start Address < NNNNNNNh	chosen file is beyond the flash	format file or specify different file.
		memory.	
6	Address Error.	The record length of the chosen	Check the contents of Motorola S
	End Address > NNNNNNNh	file has an error.	format file or specify different file.
7	Receive timeout error.	Timeout occurs during reception.	Check the connection state of the
			communication cable or restart
			the M3S-UFLA32R, and then
			reset the MCU.
8	Communication parameter error.	Receive reply other than ACK	Restart the M3S-UFLA32R and
_	Operation of the second	and NAK from the MCU.	reset the MCU.
9	Command execution error.	Receive NAK from the MCU.	reset the MCU.
10	Blank Check Error.	There is no blank after the	-
	(Error Address: H'NNNNN)	address H'NNNNNN.	
11	Verify Check Error.	At the time of verify, the data of	Check if it is the same Motorola S
	Error Address : H'NNNNN	the address H'NNNNN are	format file as the program in the
	Error Data : H'AAAA (H'BBBB)	H'AAAA (MCU side) and H'BBBB	MCU.
		(M3S-UFLA32R side) and not	
		corresponding.	
12	Verify Check Error.	Check sum value is not	Check if it is the same Motorola S
		corresponding at the time of	format file as the program in the
10			
13	ID verification error.	I ne ID code in the MCU and the	Set the correct ID code to the
	Please set up the ID code correctly.	one set in the WI3S-UFLA32R	MISO-UFLAJZK.
4.4	ID aada ia inaamaat		Enter ID and a with Howeds size at
14	ID code is incorrect.	input iD code has an error.	Enter ID code with Hexadecimal.
15	Please enter ID code with Hexadecimal.	Input ID and a has an array	Entor ID and with alphanumeric
15	D coue is incorrect.	input iD code has an error.	
	Please enter ID code correctly.		characters.

#### Table 6.1.1 Error Message List

Povision History	M3S-UFLA32R
Revision flistory	UART Flash Memory Programming Utility

Rev	Date		Description	
NEV.		Page	Summary	
1.00	Jun 25, 2000	<u> </u>	First edition issued.	
1.01	Dec 4, 2000	-	Changed output message from Japanese to English.	
1.02	Jan 29, 2002	7	Added references to 2) Connecting Host PC with Target System in Chapter 3. Changed product name from UFLA32 to M3A-UFLA32R.	
1.03	Feb 14, 2002	7	Changed the description of 2) Connecting Host PC with Target System in Chapter 3.	
1.04	Mar 1, 2002	2	Added "Notes regarding these materials."	
1.10	Oct 28, 2002	6	Added description to 1) Setting up M3S-UFLA32R in Chapter 3.	
1.20	Dec 3, 2002	6	Changed the location where "Setup.exe" is stored in a CD-ROM.	
1.30	Jul 11, 2003		Changed the layout of window. Supported 32176/32180/32182 Group MCUs.	
1.40	Mar 6, 2007		Supported 32185/32186 Group and 32192/32195/32196 Group MCUs. Reviewed overall contents.	

#### Uart Flash Memory Programming Utility User's Manual M3S-UFLA32R

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M3S-UFLA32R User's Manual





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