

Application Note

FLASH_UserInformation

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1. Preface

This application note describes sample software FLASH_UserInformation that uses FLASH Memory(FLASH). This document helps the user check operation of a product under development and develop its program.

2. Technical Term

Term/Abbreviation	Definition
BSP	Board Support Package
CG	Clock Control and Operation Mode
FLASH	Flash Memory
Timer	T32A:32-bit Timer Event Counter
UART	Universal Asynchronous Receiver Transmitter

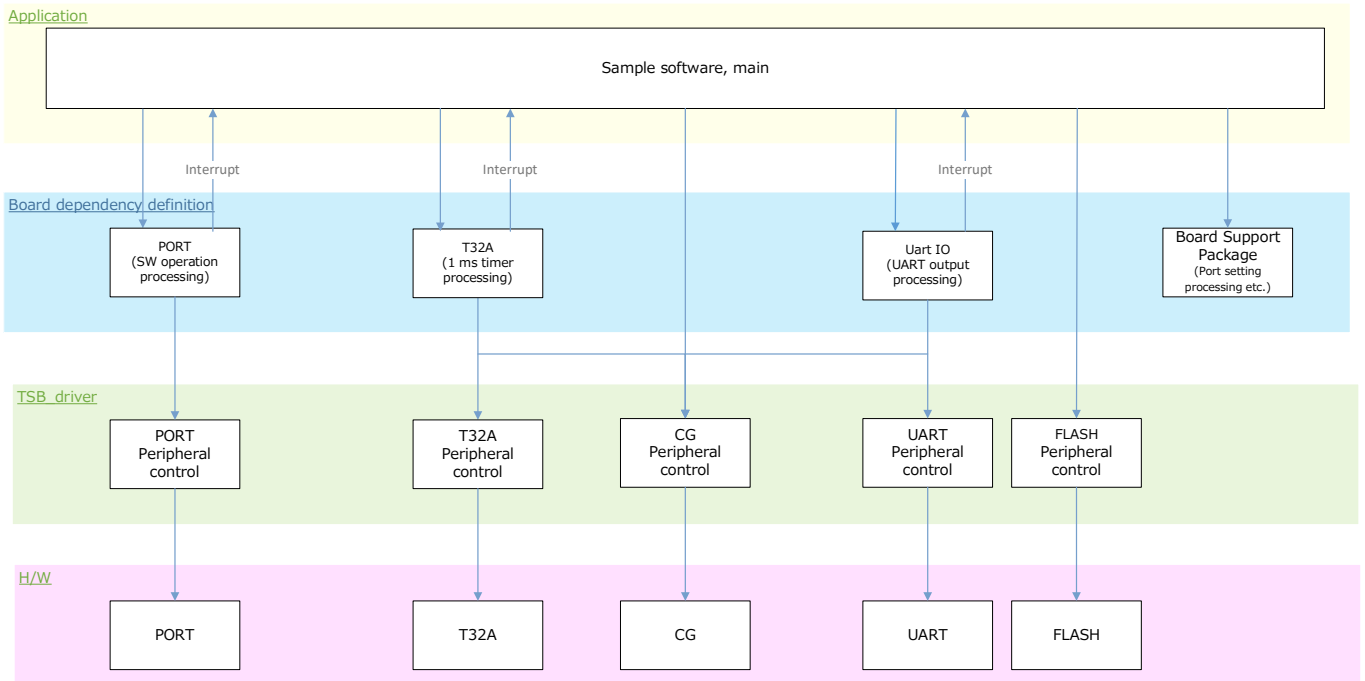
3. Reference Document

Document	Notes
Data sheet	Refer to the data sheet of MCU to be used.
Reference manual	Refer to the reference manual of each IP to be used.
Application note MCU User Guide	Refer to the MCU user guide to be used.

4. Target Sample Program

Sample Program	Outline
FLASH_UserInformation	Sample program of FLASH_UserInformation function

5. Configuration Diagram



6. Sample Program: FLASH_UserInformation

This is sample software that accesses (Write / Erase) User_Information_A each time BSP_PSW_1 is pressed.

6.1. Outlines of Operation

When BSP_PSW_1 is pressed, the data of Backup Size will be saved to RAM_A from the beginning Of User Information A.

Then, User Information A is erased and string A is written to the first address of User Information A.

6.2. Function to Use

The functions to use are as follows:

For the Port assignment of each BSP channel, refer to the MCU user guide.

IP	Channel	Objective
PORT (Push-Switch)	BSP_PSW_1	Event trigger
T32A	BSP_T32A_TIMER_1	Interval timer
UART	BSP_UART_1	For terminal emulator communication

6.3. Interrupt to Use

Interrupt	Outlines
(Note1)	UART Transmission interrupt
(Note2)	UART Error interrupt
(Note3)	T32A Timer A Timer counter increment every 1ms

Note1: For SBK-M471, "INTSC0TX".

For AdBunM3HQA, "INTUART0TX".

Note2: For SBK-M471, "INTSC0ERR".

For AdBun-M3HQA, "INTUART0ERR".

Note3: For SBK-M471 and AdBun-M3HQA, "INTT32A00AC".

6.4. Configuration

Configuration setting.

Configuration	Soft Definition Name	Current Value (Defaults)	Description
User Information A	None	UserInformation All Areas	User Information Area
Backup Size	BSPBACKUPSIZE	0x80	128byte
RAM A	GetUserInformationData	GetUserInformationData	"GetUserInformationData" is backed up by BACKUPSIZE.
String A	BSPUserInformationData	(Note1): "Toshiba MCU name User Information Example"	Data to be written to User Information A

Note1: For SBK-M471, the MCU name is "TMPM471F10".

For AdBun-M3HQA, the MCU name is "TMPM3HQFDA".

6.5. Example of Terminal Emulator Output

6.5.1. Normal Operation

```
FLASH User Information Area Write  
Please press the SW1  
RAM transferring  
Erasing.  
writing.  
Finished.  
Check a variable GetUserInformationData  
FLASH User Information Area Write  
Please press the SW1
```

6.5.2. Case of Erasing Error Occurrence

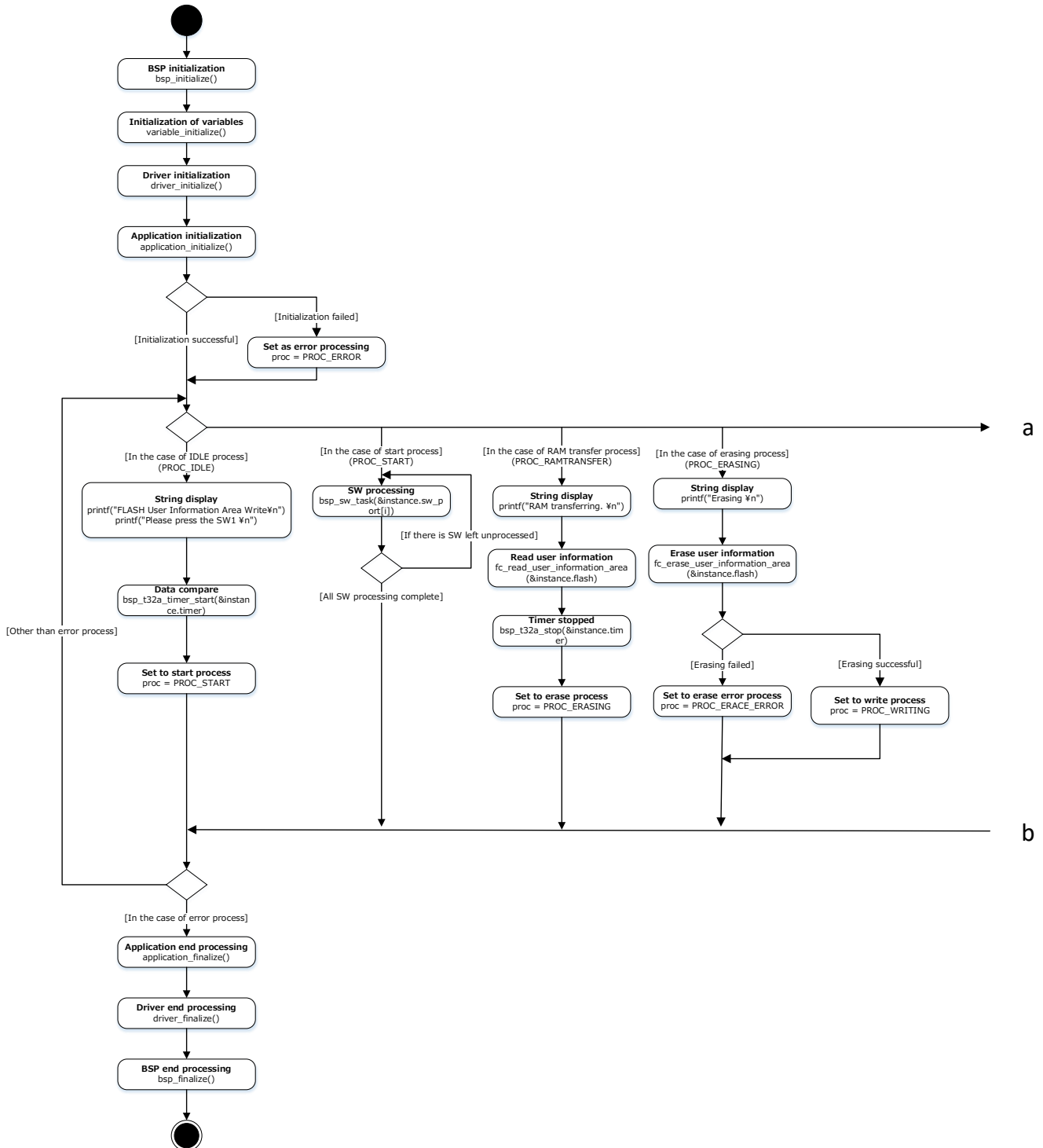
```
FLASH User Information Area Write  
Please press the SW1  
RAM transferring  
Erasing.  
Erasing Error!!  
FLASH User Information Area Write  
Please press the SW1
```

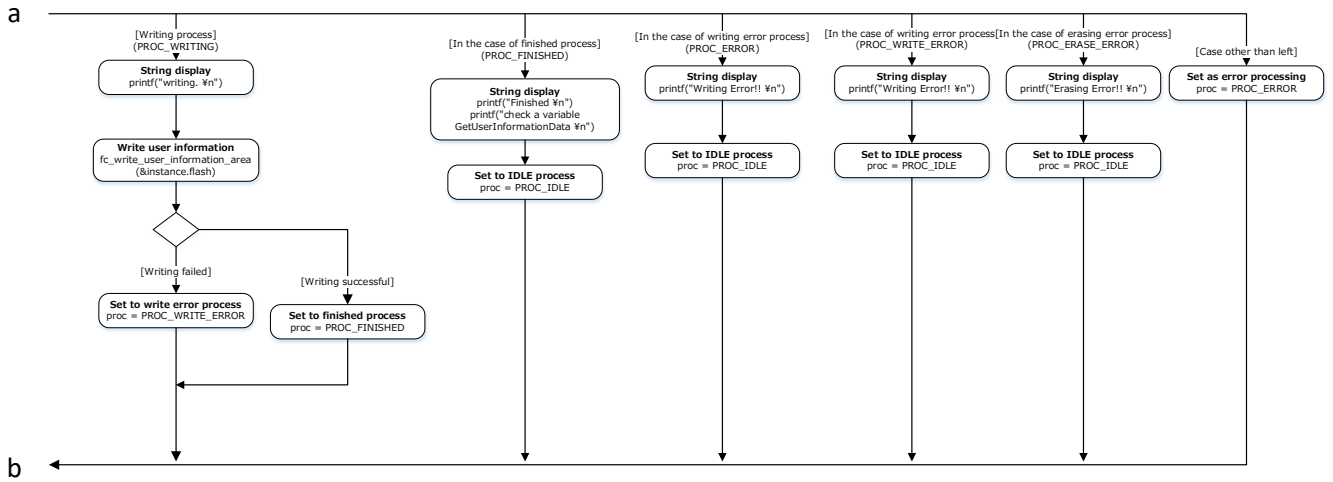
6.5.3. Case of Writing Error Occurrence

```
FLASH User Information Area Write  
Please press the SW1  
RAM transferring  
Erasing.  
writing.  
Writing Error!!  
FLASH User Information Area Write  
Please press the SW1
```

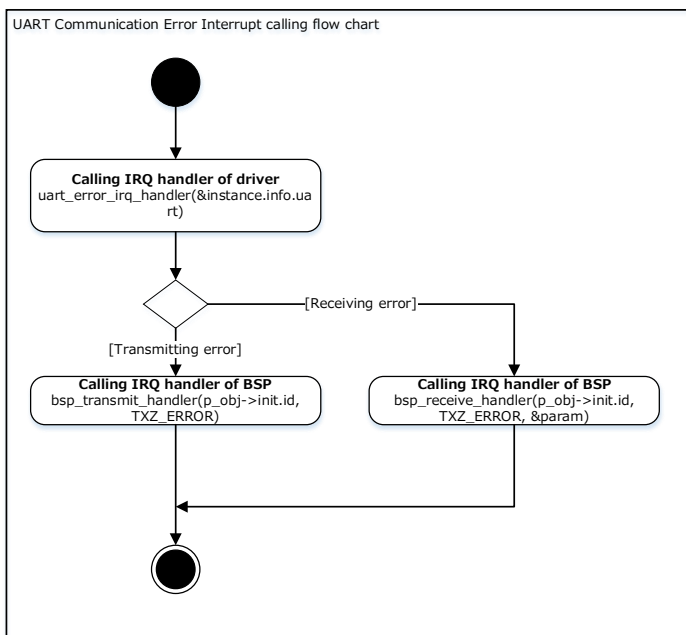
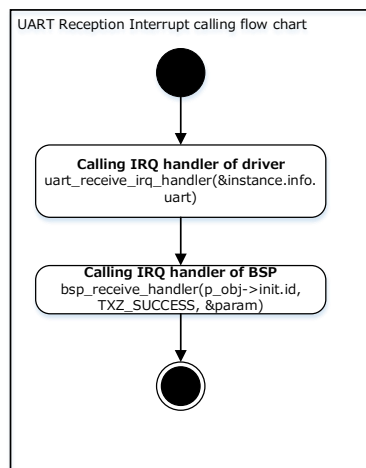
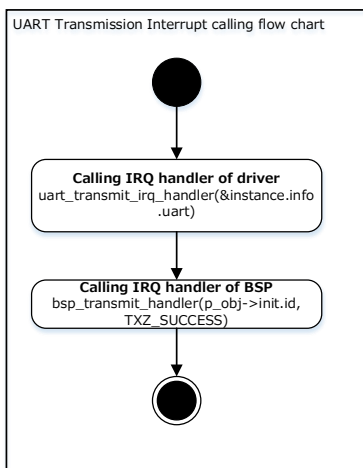
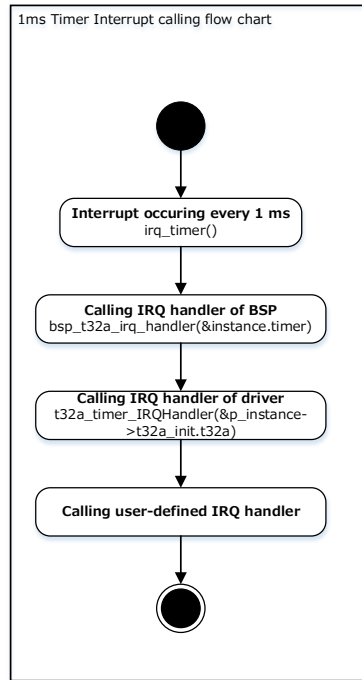
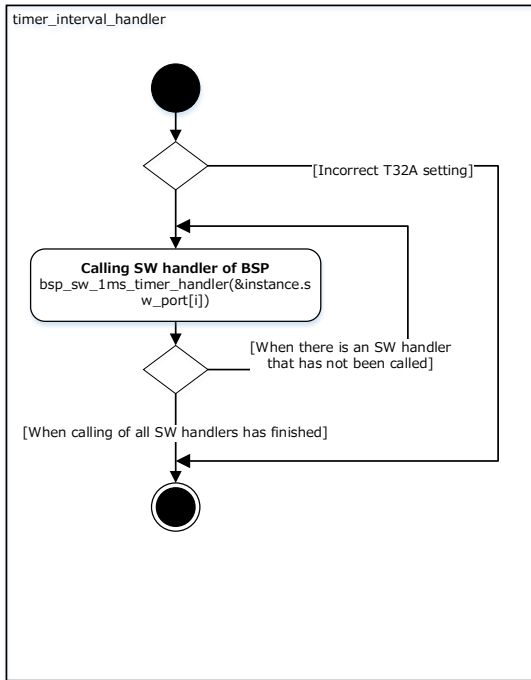
7. Activity diagram

7.1. main





7.2. Interrupt



8. Revision History

Revision	Date	Description
1.0	2025-01-20	First release
1.1	2025-10-30	6.3Interrupt to Use Added M3H Interrupt Name.

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