

## Application Note

# FLASH\_PROTECT

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## 1. Preface

This application note describes sample software for the FLASH\_PROTECT 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

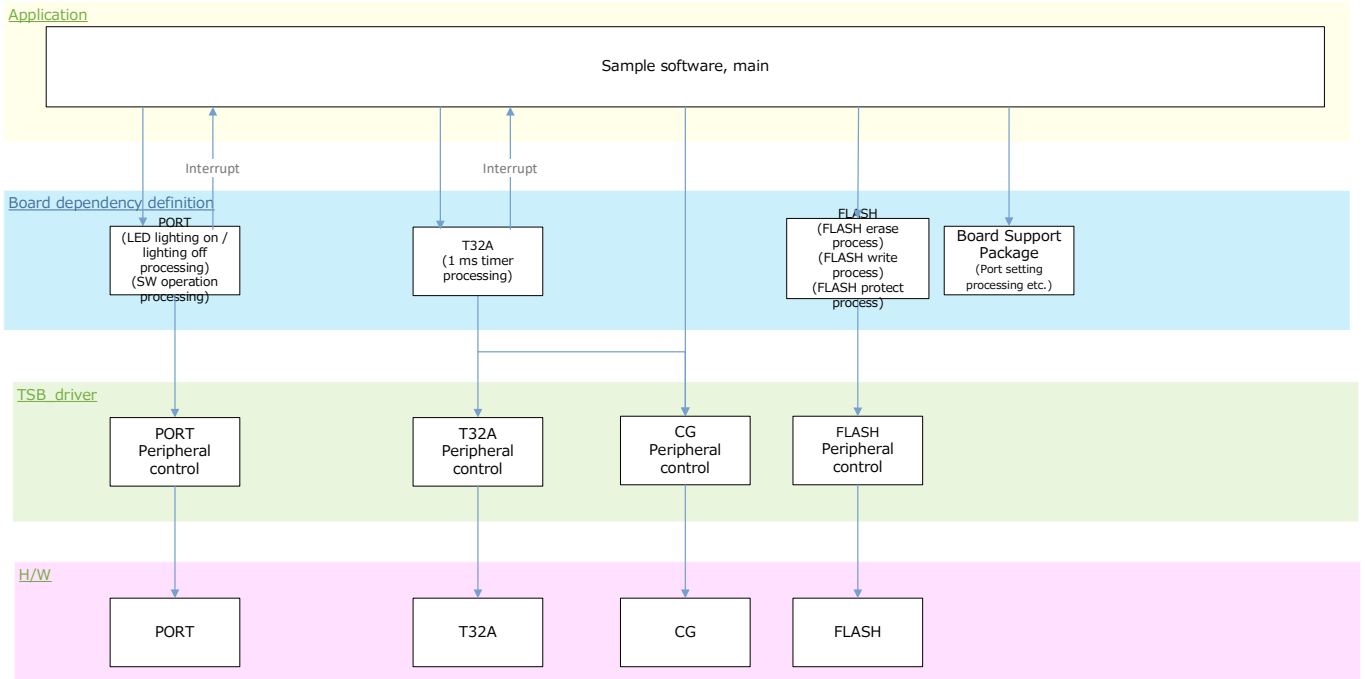
## 3. Reference Document

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_PROTECT	Sample program of FLASH_PROTECT function

## 5. Configuration Diagram



## 6. Sample Program:FLASH\_PROTECT

This is sample software performs a page erase process according to the protection status and then a data write process each time BSP\_PSW\_1 is pressed.

### 6.1. Outlines of Operation

Lights up BSP\_LED\_1 and BSP\_LED\_2.

Pressing BSP\_PSW\_1 turns on BSP\_LED\_1 and turns off BSP\_LED\_2.

Protects the Code\_Page and erases the data on the Code\_Page.

(The failure of the data erase process confirms that protection has been set.)

After that, remove the protection from the Code\_Page and perform the data erase process on the Code\_Page again.

(The success of the data erase process confirms that the protection has been removed.)

Write Test\_Data to the Code\_Page and turn on BSP\_LED\_1 and BSP\_LED\_2.

Pressing BSP\_PSW\_1 again turns on BSP\_LED\_2 and turns off BSP\_LED\_1.

Protection is set for the Code\_Block, and the data in the Code\_Block is erased.

(The failure of the data erase process confirms that protection has been set.)

After that, remove the protection from the Code\_Block and erase the data from the Code\_Block again.

(The success of the data erase process confirms that the protection has been removed.)

Write Test\_Data to the Code\_Block and turn on BSP\_LED\_1 and BSP\_LED\_2.

Pressing BSP\_PSW\_1 will return to Code\_Page processing.

### 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
PORT(LED)	BSP_LED_1	For operation check
	BSP_LED_2	For operation check
	BSP_LED_3	For operation check
	BSP_LED_4	For operation check

### 6.3. Interrupt to Use

Interrupt	Outlines
(Note1)	T32A Timer A Timer counter increment every 1ms

Note1: For SBK-M471, "INTT32A00AC".

#### 6.4. Configuration

“main.c” configuration setting.

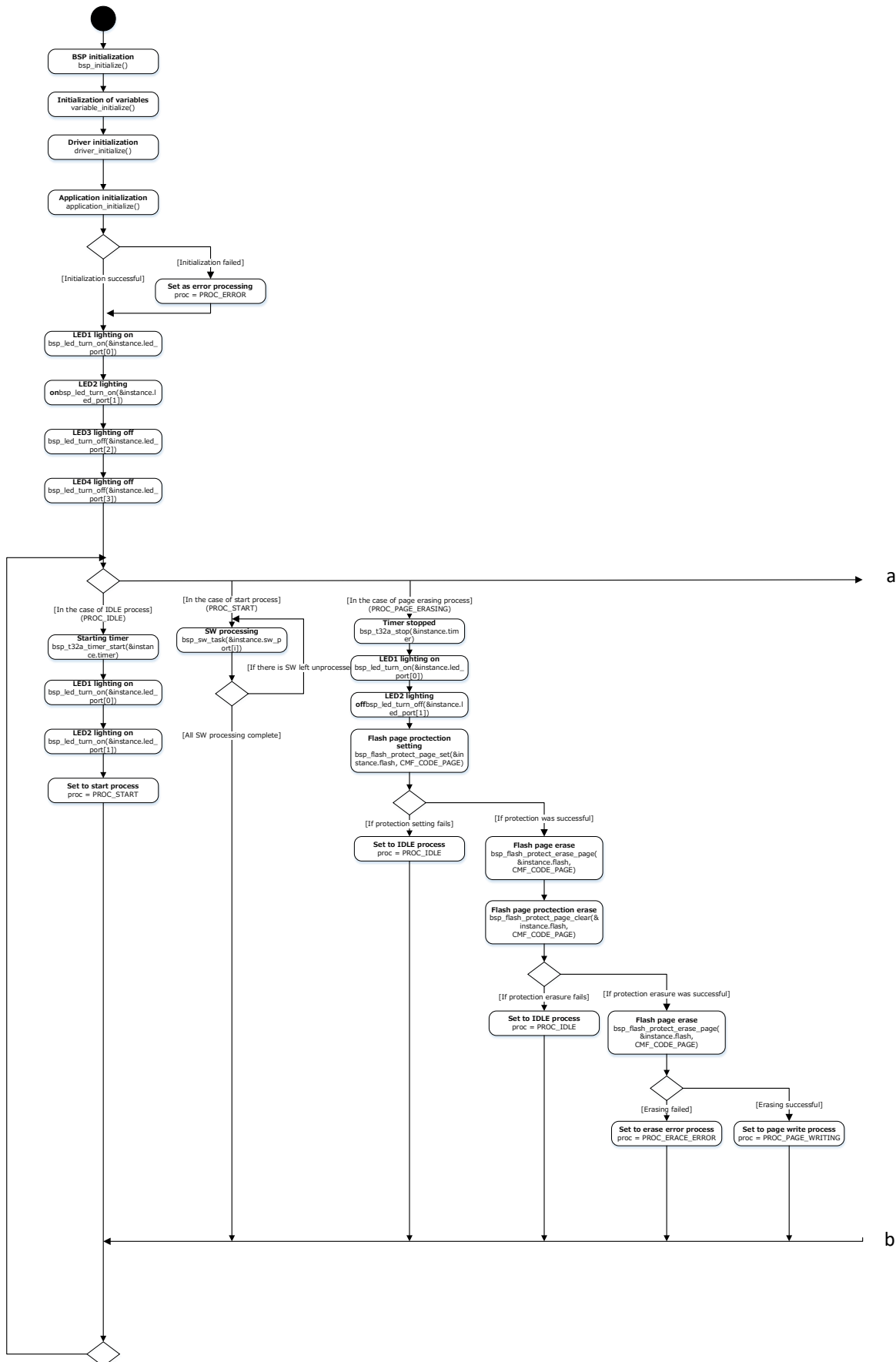
Configuration	Soft Definition Name	Current Value (Defaults)	Description
Code_Page	CMF_CODE_PAGE	Code Flash Page3 (FC_CODE_FLASH_PAGE3)	Code Flash page number
Code_Block	CMF_CODE_BLOCK	Code Flash Block2 (FC_CODE_FLASH_BLOCK2)	Code Flash Block Number
Test_Data	CMF_Test_Data	"Execute data A"	Write data contents

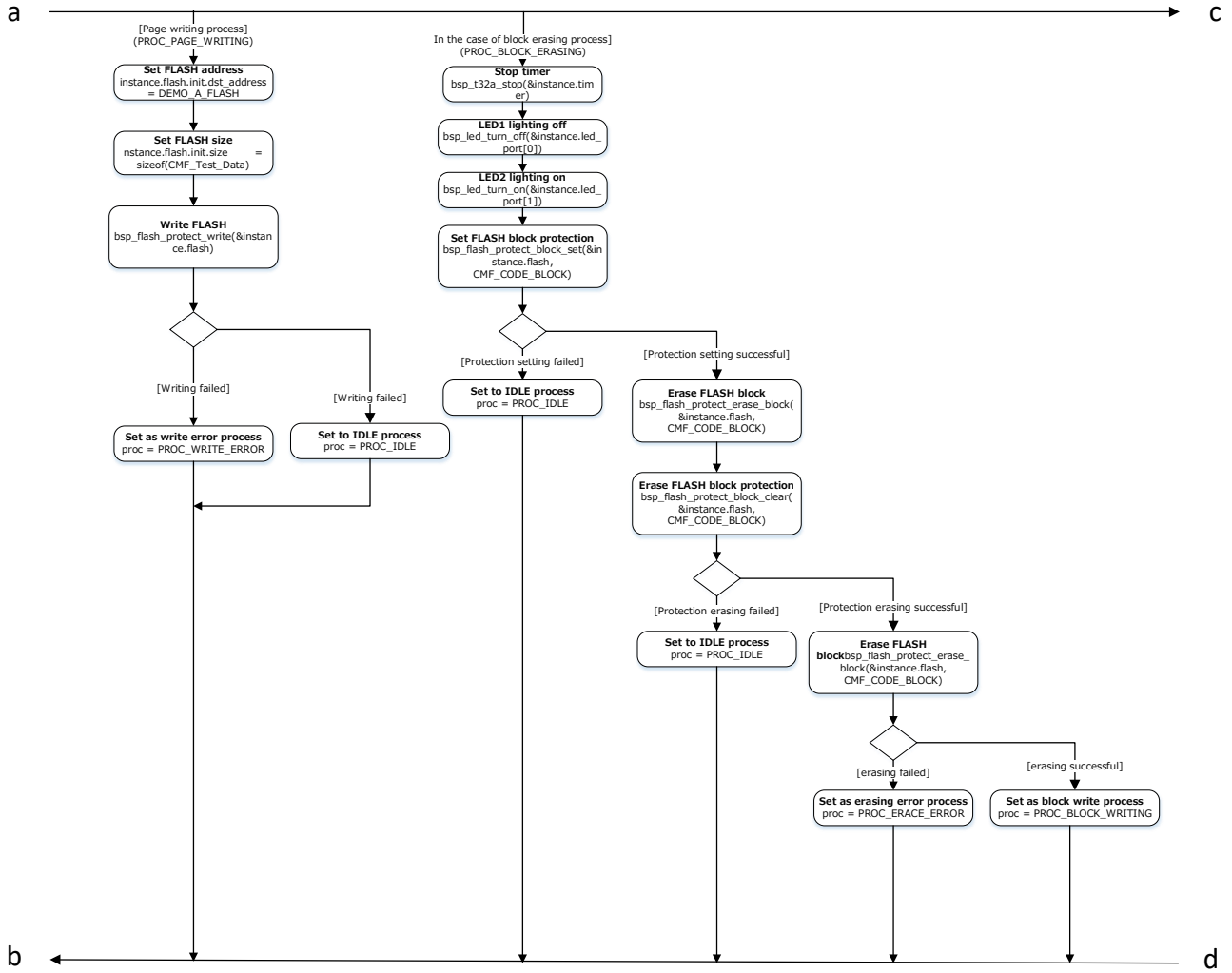
#### 6.5. Example of Terminal Emulator Output

Nothing.

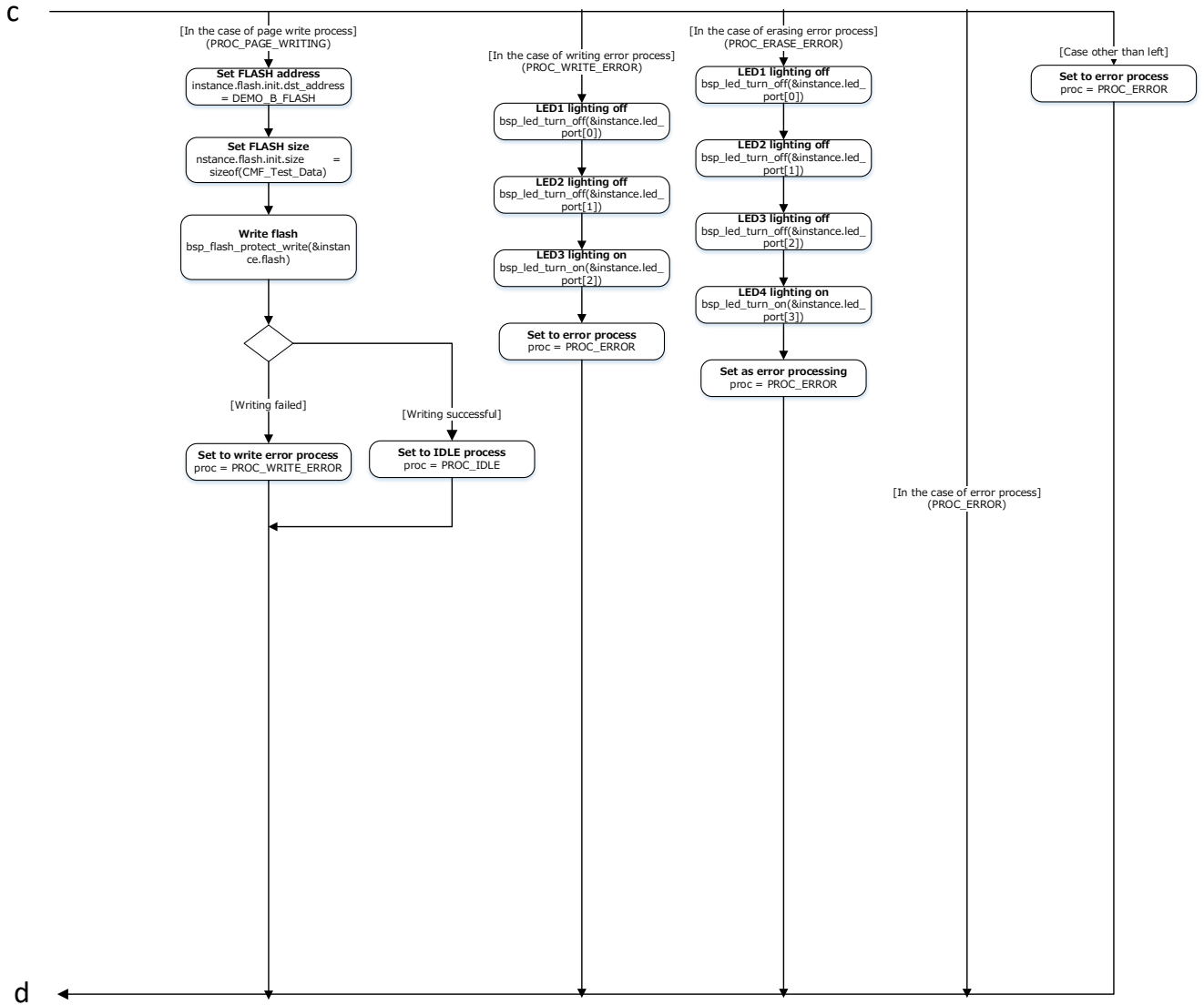
## 7. Activity diagram

### 7.1. main

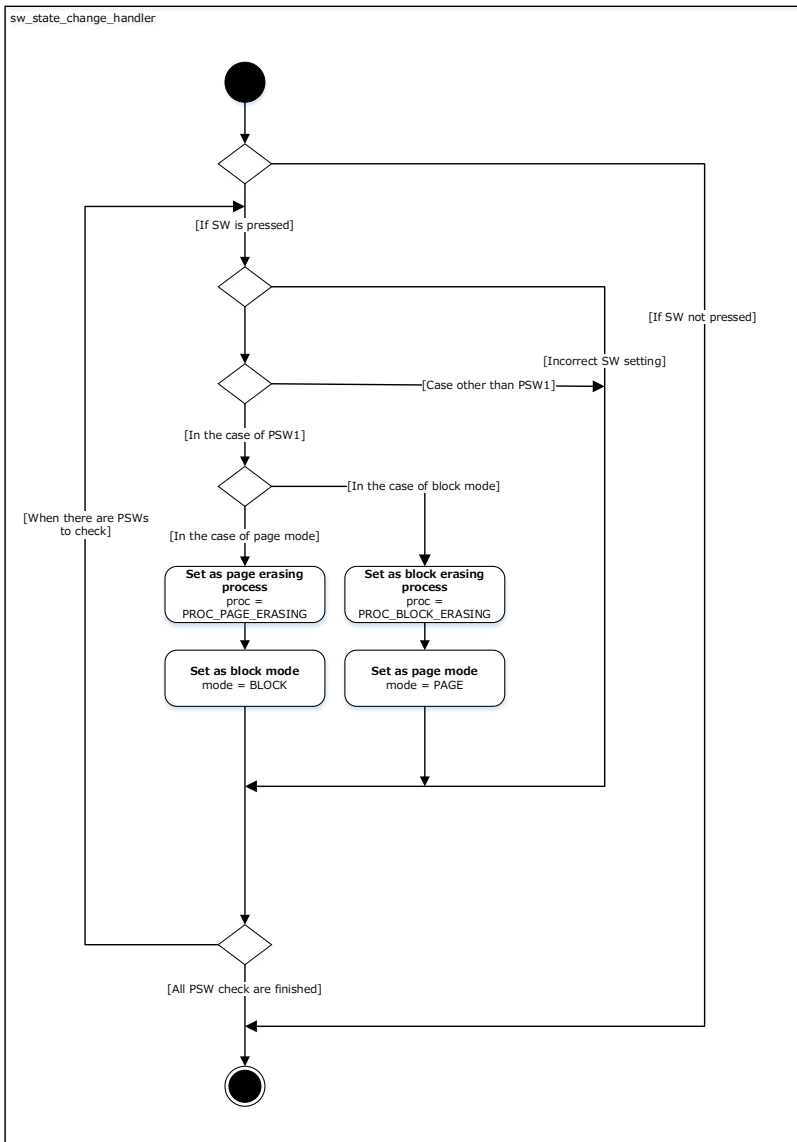
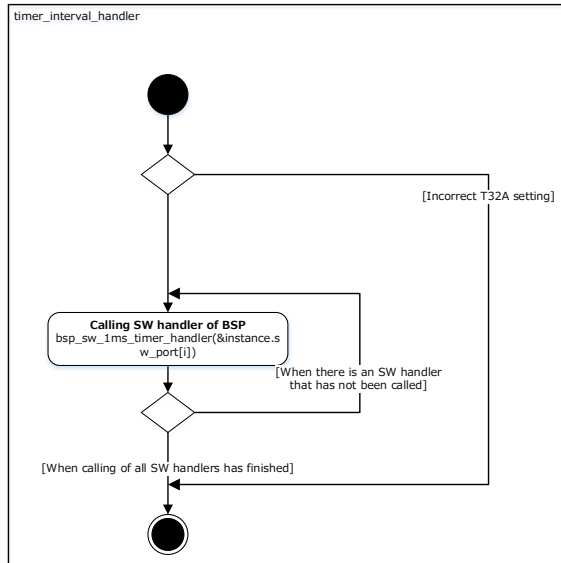
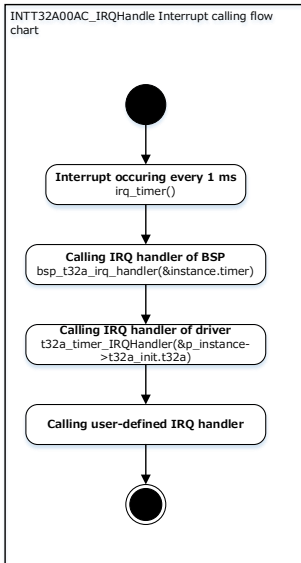








## 7.2. Interrupt



**8. Revision History**

Revision	Date	Description
1.0	2025-01-20	First release

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