

Application Note

SIWDT (SIWDT-A)

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Table of Contents

Table of Contents.....	2
1. Preface	3
2. Technical Term	3
3. Reference Document	3
4. Target Sample Program	4
5. Configuration Diagram	4
6. Sample Program:SIWDT	5
6.1. Outlines of Operation	5
6.2. Function to Use.....	5
6.3. Interrupt to Use	5
6.4. Configuration.....	5
6.5. Example of Terminal Emulator Output	5
7. Activity diagram.....	6
7.1. main	6
7.2. variable_initialize.....	7
7.3. application_initialize	7
7.4. driver_initialize	8
7.5. Interrupt.....	9
8. Revision History	11
RESTRICTIONS ON PRODUCT USE	12

1. Preface

This application note describes sample software for the Clock Selective Watchdog Timer (SIWDT) function. 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
SIWDT	Clock Selective Watchdog Timer
T32A	32bit Timer Event Counter

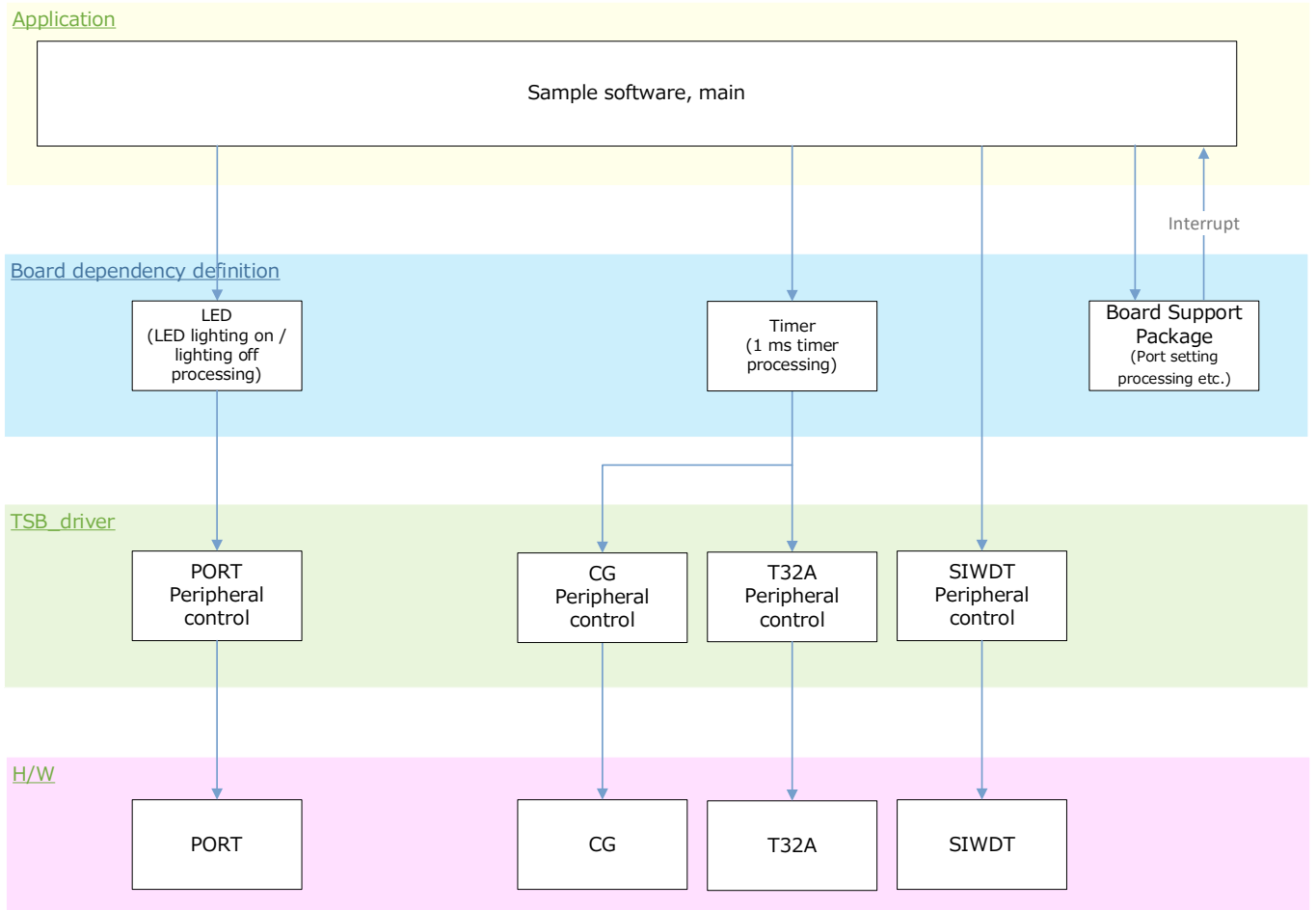
3. Reference Document

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
SIWDT	Sample program of SIWDT function

5. Configuration Diagram



6. Sample Program:SIWDT

This sample software uses SIWDT function to turn off the blinking LED at startup when a watchdog timer interrupt is detected.

6.1. Outlines of Operation

At startup, BSP_LED_1~4 will blink repeatedly at 200ms intervals.

When WDT detect period has elapsed, the watchdog timer interrupt is generated and LED is turned off.

WDT counting is cleared when the compile switch DEMO_WDT_CLEAR is Enable.

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
T32A	BSP_T32A_TIMER_1	Interval timer
PORT	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
INTT32A00A	T32A Timer A Timer counter increment every 1ms for display update

6.4. Configuration

“main.c” configuration setting.

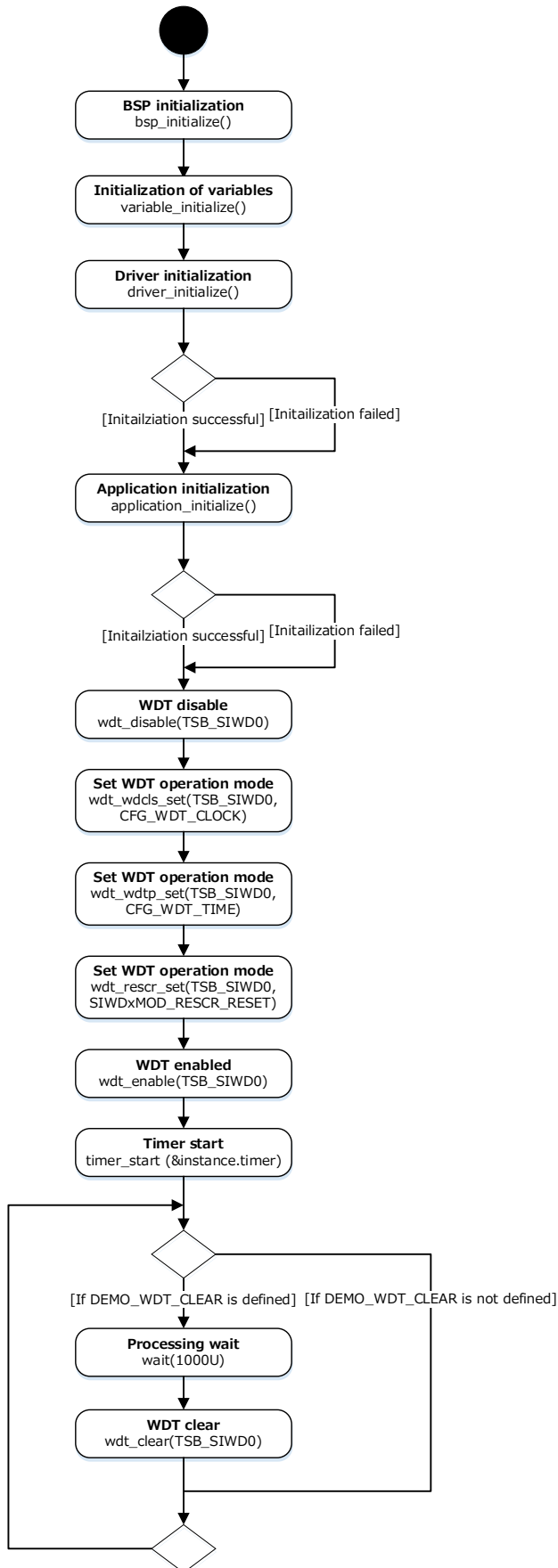
Configuration	Current Value	Description
fiWD	fsys / 4	WDT clock count frequency
CFG_LED_BLINK_TIME	200ms	LED ON/OFF Switching cycle
Watchdog timer	$(2^{25}) / \text{fiWD}$	WDT Detection time
DEMO_WDT_CLEAR	Enable	Enable : WDT Clear the count
		Disable :WDT Do not clear the count

6.5. Example of Terminal Emulator Output

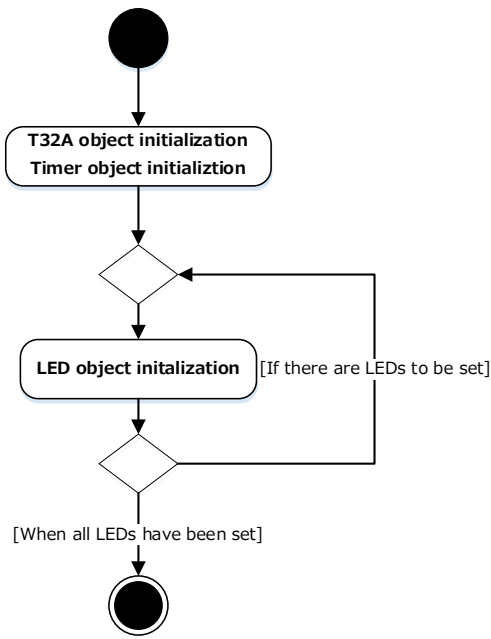
Nothing.

7. Activity diagram

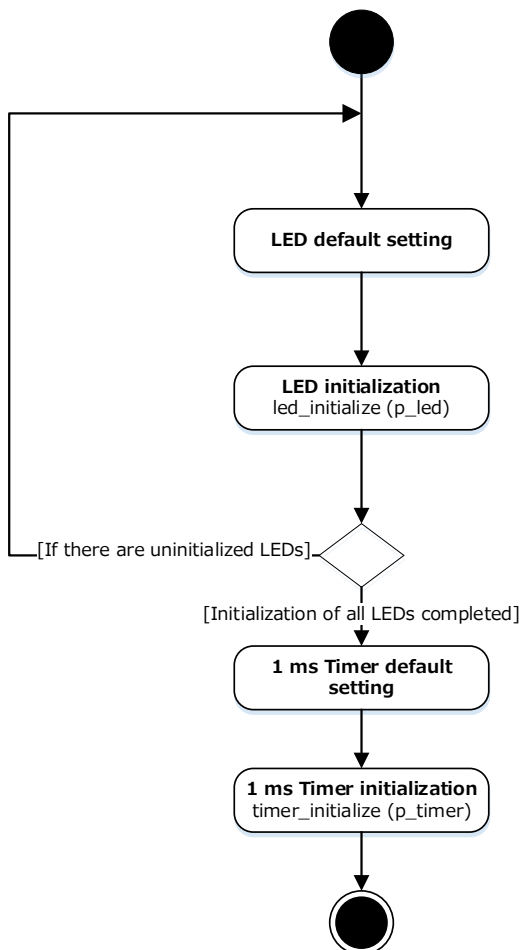
7.1. main



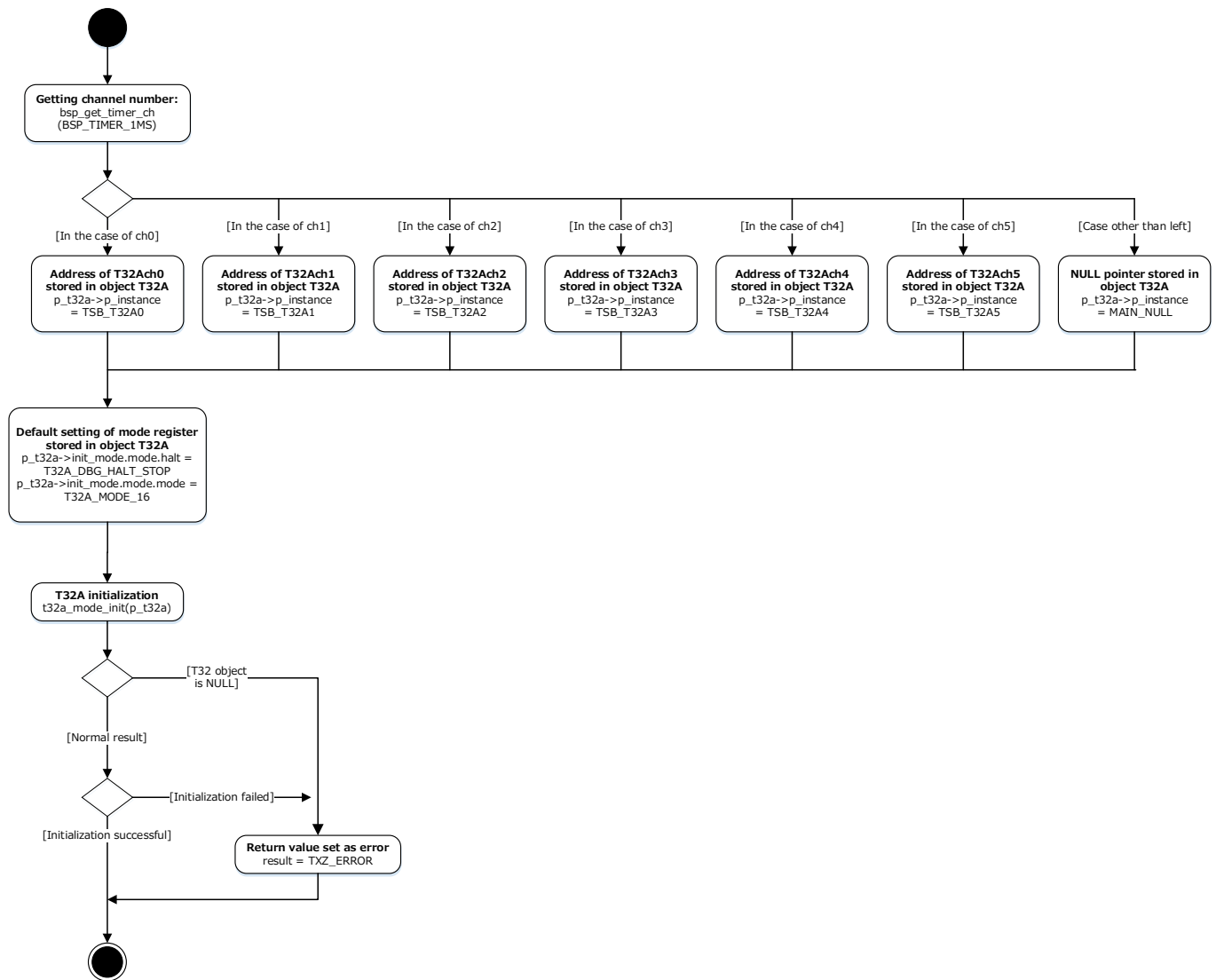
7.2. variable_initialize



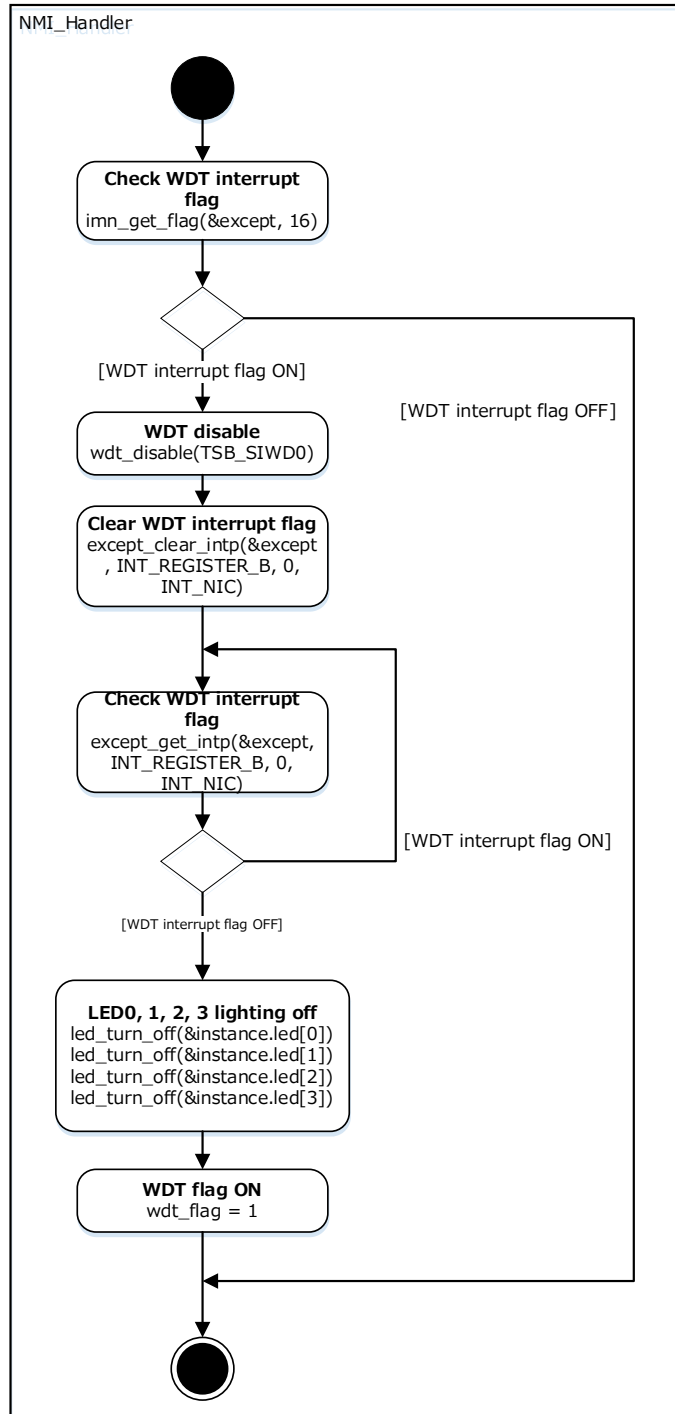
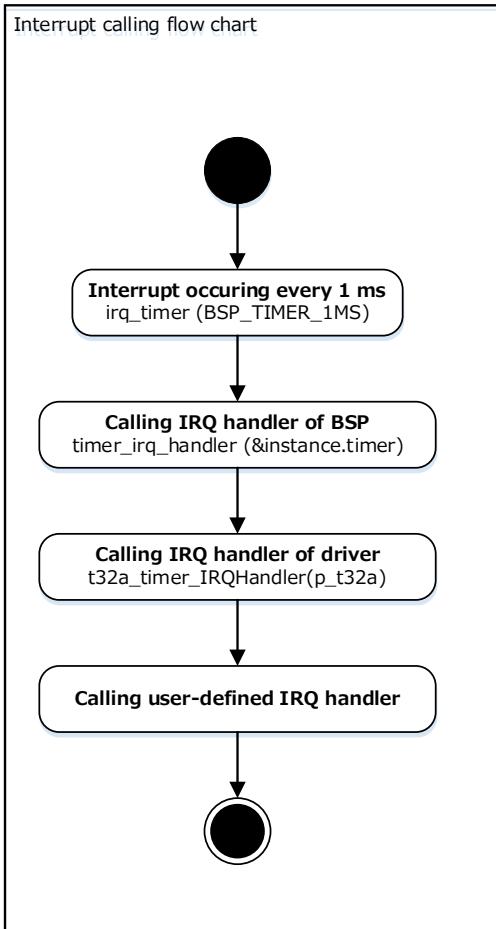
7.3. application_initialize

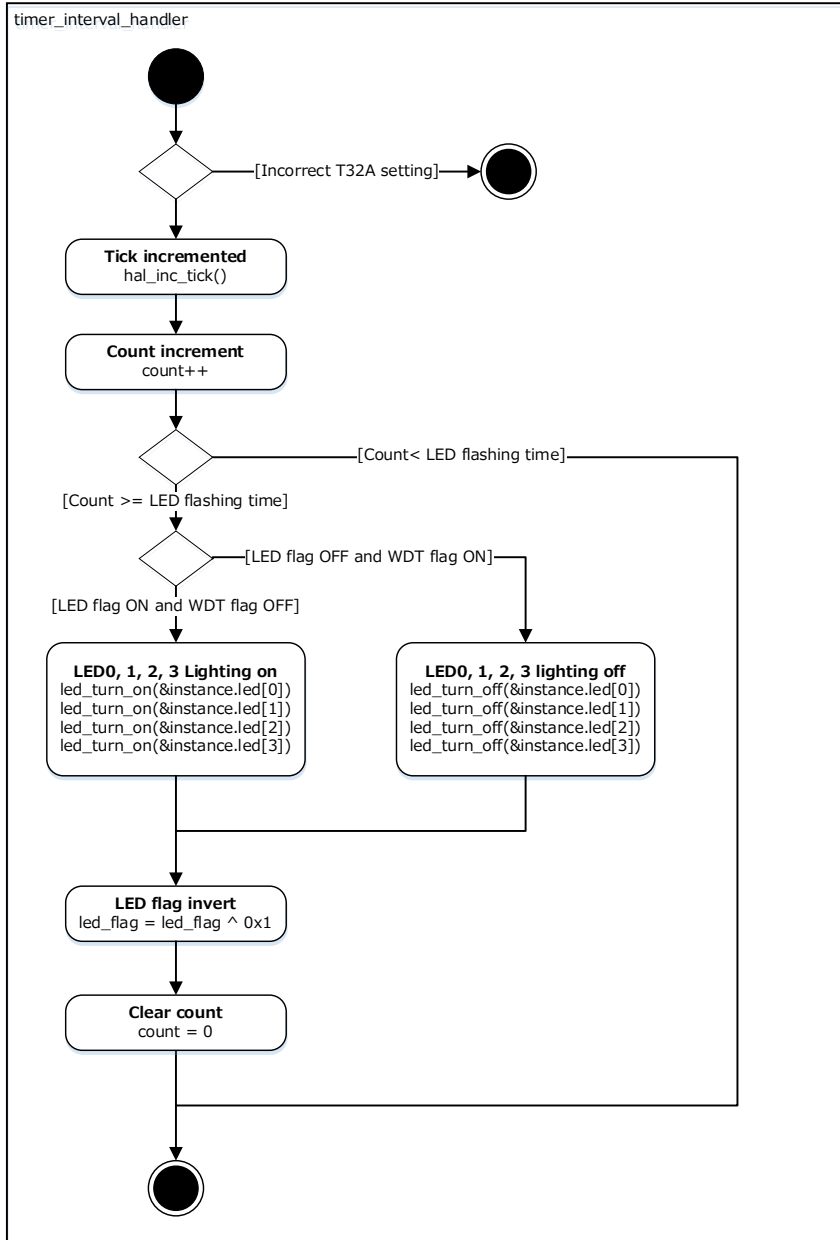


7.4. driver_initialize



7.5. Interrupt





8. Revision History

Revision	Date	Description
1.0	2023-10-16	First release

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