

Application Note

SMIF

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1. Preface

This application note describes sample software SMIF by Serial Memory Interface(SMIF).
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
SMIF	Serial Memory Interface
UART	Universal Asynchronous Receiver Transmitter
Timer	T32A:32-bit Timer Event Counter

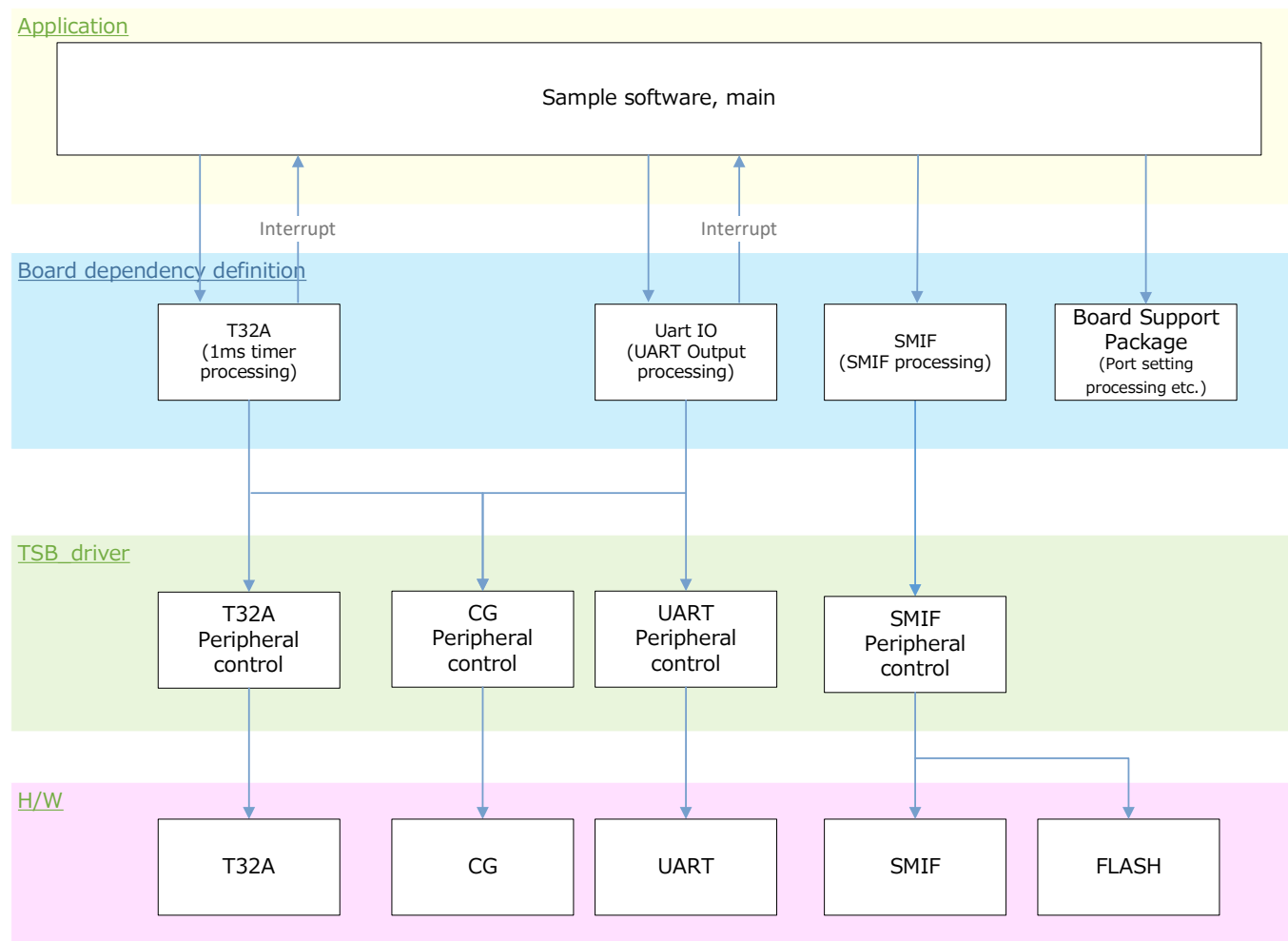
3. Reference Document

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.
Driver API List	Refer to the Doc folder.

4. Target Sample Program

Sample Program	Outline
SMIF	Sample program of SMIF function

5. Configuration Diagram



6. Sample Program: SMIF

The SMIF function communicates with the SPI Flash according to commands entered from the terminal software.

The execution result of each command is displayed on the terminal software in hexadecimal format.

6.1. Outlines of Operation

When a command is entered from the terminal software, processing is performed according to the command.

Command	Formart	Overview
write	write string	Writes the string specified by the command followed by 0x00.
read	read	Reads the string that was written most recently.
dump	dump address byte	Reads the specified number of bytes from the specified address. Note: The address and byte count can be omitted.

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
SMIF	BSP_SMIF_1	For SMIF Communication
UART	BSP_UART_1	For Terminal Software Communication

6.3. Interrupt to Use

For details, please refer to the “Interrupt List by Sample” in the MCU User’s Manual.

6.4. Configuration

Configuration setting.

Configuration	Soft Definition	Current Value (Defaults)	Description
Write DATA MAX.	BSP_WRITE_DATA_MAX	16	Maximum Writable character Count (Unit: character)
FLASH START ADDRESS	BSP_FLASH_START_ADDRESS	0x00000000	FLASH Data Start Address
FLASH END ADDRESS	BSP_FLASH_END_ADDRESS	0x00FFFFFF	FLASH Data End Address
Dump DATA MAX.	BSP_DUMP_DATA_MAX	0x00010000	Maximum Byte Count Allowed for the DUMP Command

6.5. Example of Terminal Emulator Output

6.5.1. Normal Opereation

- Write command

```
command > write testdata  
write data > testdata
```

- Read command

```
command > read  
read data > testdata
```

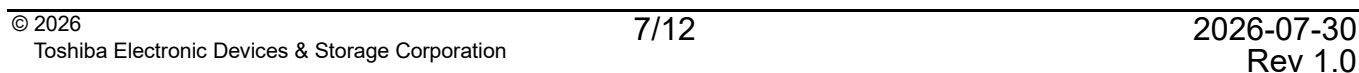
- Dump command

```
command > testdata  
Command Error!!  
command > write testdatatestdatatestdata  
Parameter Error!!
```

6.5.2. Error Operation

```
command > testdata  
Command Error!!  
command > write testdatatestdatatestdata  
Parameter Error!!
```

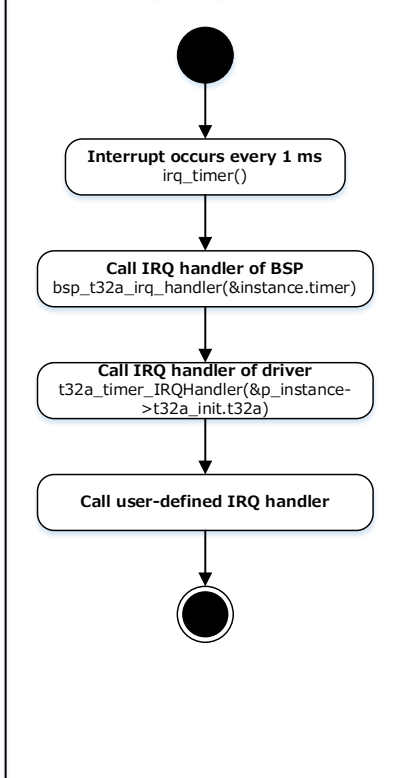
7.1. main



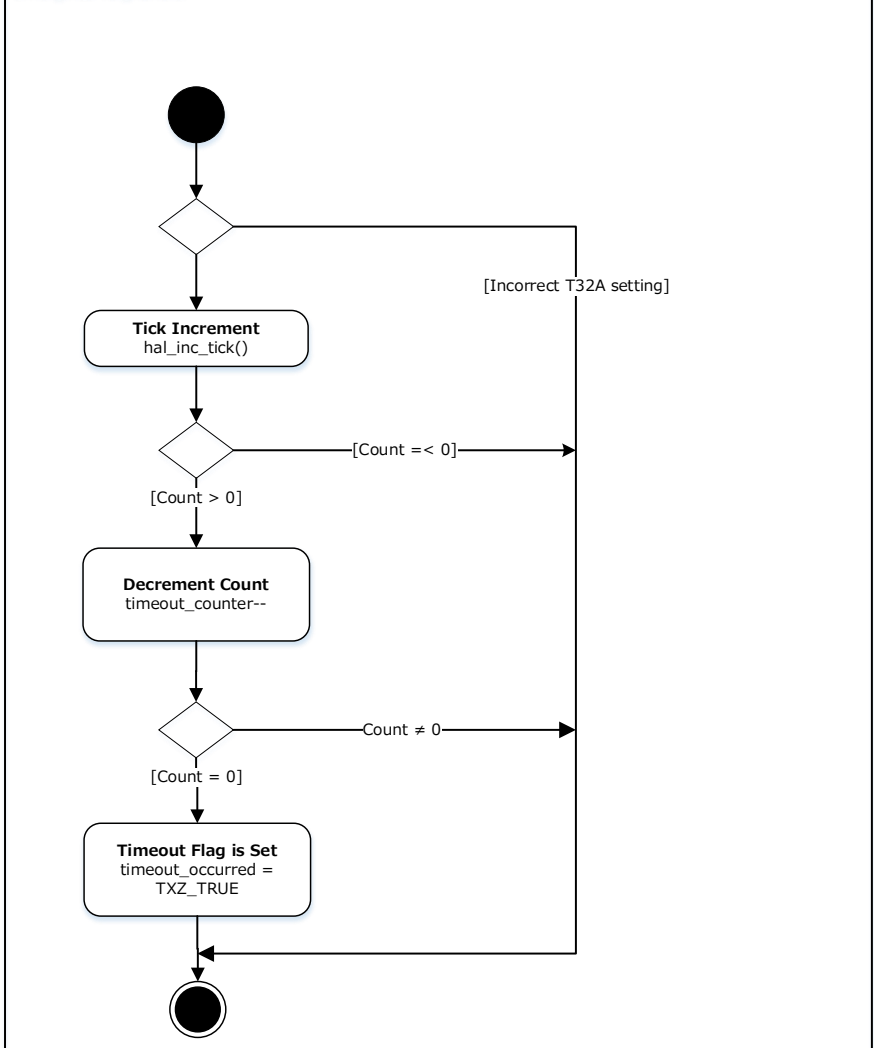


7.2. Interrupt

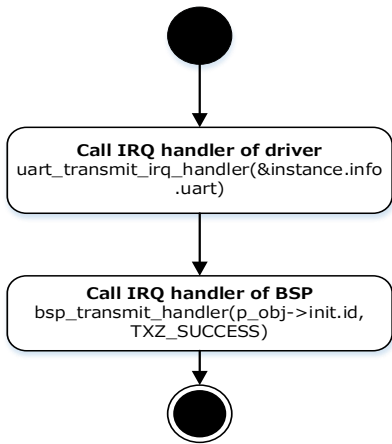
1ms Timer Interrupt calling flow



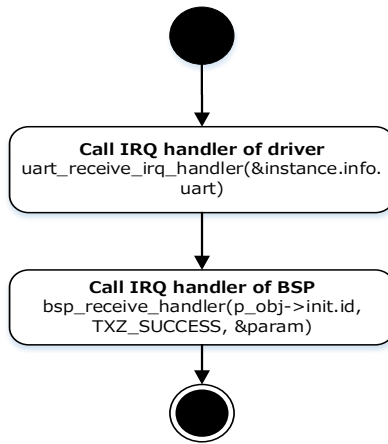
timer_interval_handler



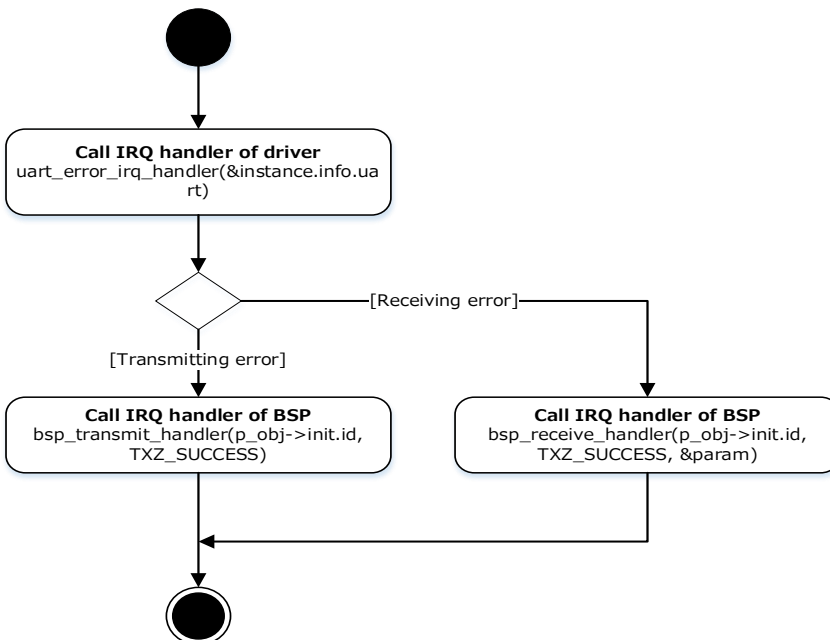
UART TX Interrupt calling flow



UART RX Interrupt calling flow



UART Communication Error Interrupt calling flow



8. Revision History

Revision	Date	Description
1.0	2026-07-30	First release

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