

Application Note

RTC

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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: RTC	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
6.5.1. Normal Operation	5
6.5.2. Case of Error Occurrence	5
7. Activity diagram.....	6
7.1. main	6
7.2. Interrupt.....	7
8. Revision History	8
RESTRICTIONS ON PRODUCT USE	9

1. Preface

This application note describes sample software RTC using real time clock (RTC).

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
RTC	Real Time Clock
UART	Universal Asynchronous Receiver Transmitter

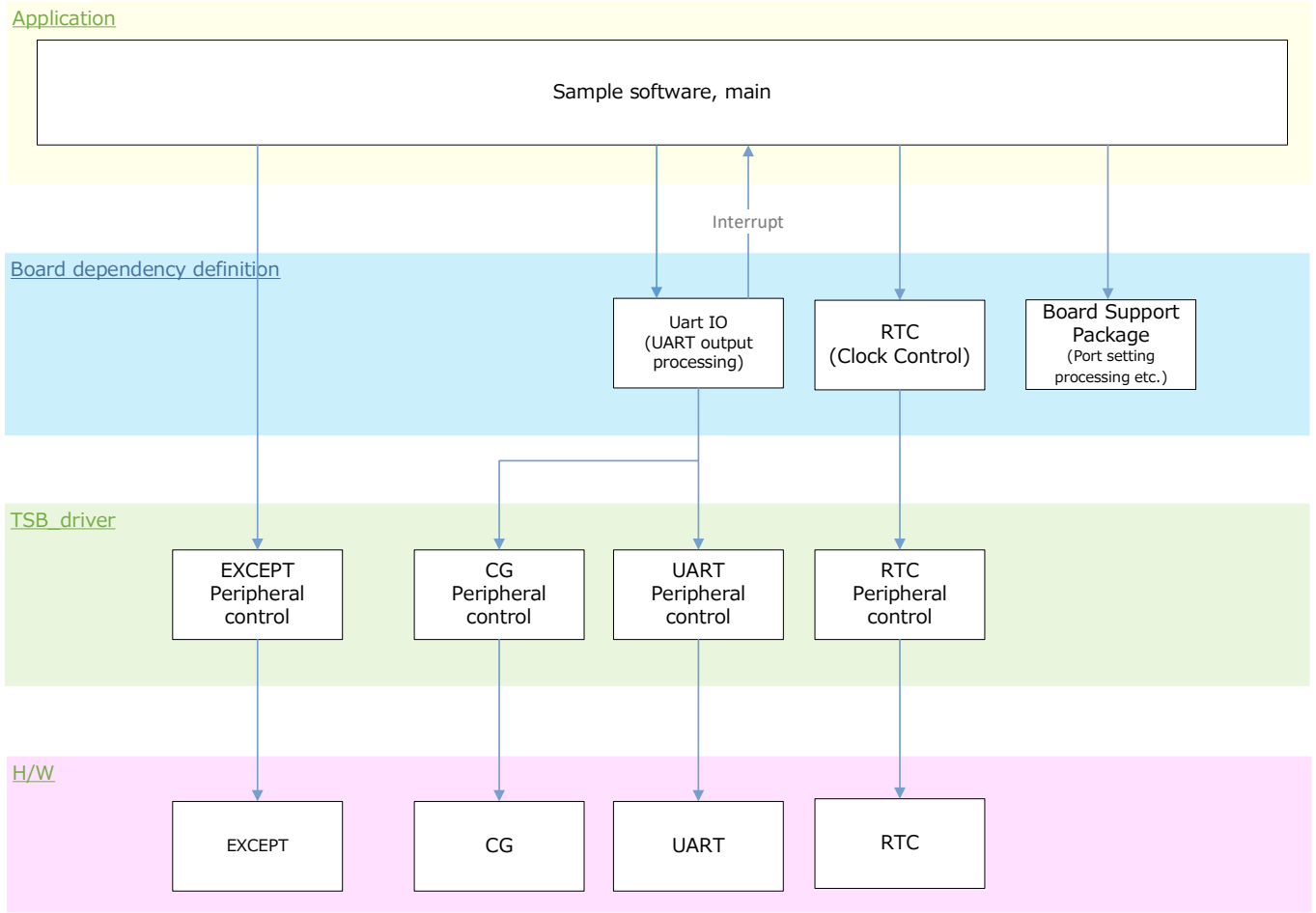
3. Reference Document

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
RTC	Sample program of RTC function

5. Configuration Diagram



6. Sample Program: RTC

This is sample software for clock control that displays the current time on the terminal software every second.

6.1. Outlines of Operation

Displays the date and time on the terminal software. Sets an initial time and outputs a log every second.

6.2. Function to Use

The functions to use are as follows:

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

IP	Channel	Objective
RTC	-	For RTC event trigger
UART	BSP_UART_1	For terminal emulator communication

6.3. Interrupt to Use

Interrupt	Outlines
INTRTC	RTC interrupt
INTUART0TX	UART Transmission interrupt
INTUART0ERR	UART Error Interrupt

6.4. Configuration

Configuration setting.

Configuration	Soft Definition Name	Current Value (Defaults)	Description
Initial Time	CFG_HOROL_HOUR_N OTATION	RTC_HOUR_NOTATION_2 4	2025-01-01 21:17:30 (Year-Month-Day Hour:Minute:Second) Refer to the rtc_a.h file for the configuration values
	CFG_HOROL_CENTUR Y	21 25	
	CFG_HOROL_YEAR	RTC_MONTH_JAN	
	CFG_HOROL_MONTH	1	
	CFG_HOROL_DATE	21	
	CFG_HOROL_HOUR	17	
	CFG_HOROL_MIN	30	
	CFG_HOROL_SEC		

6.5. Example of Terminal Emulator Output

6.5.1. Normal Operation

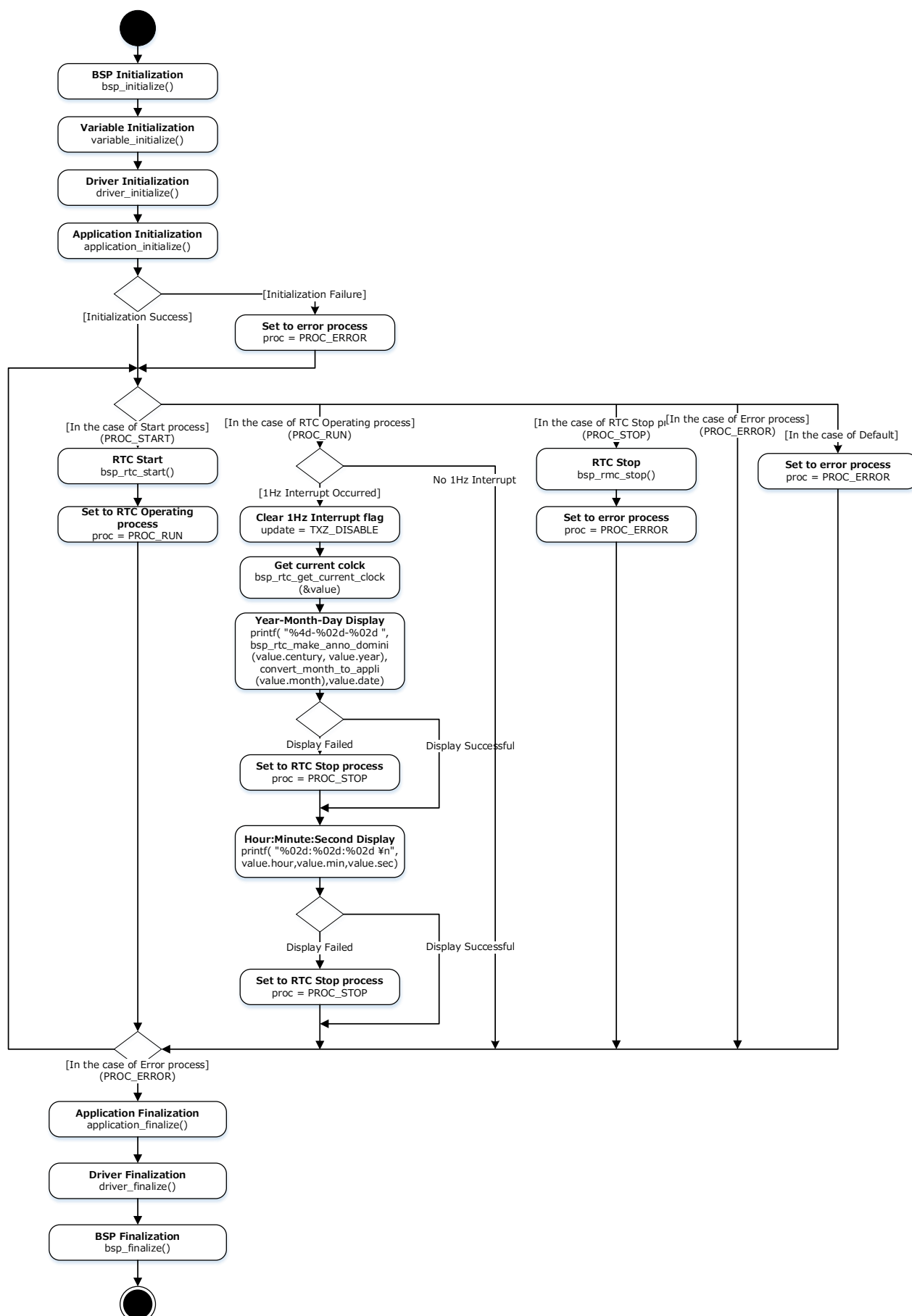
```
2025-01-01 21:17:30
2025-01-01 21:17:31
2025-01-01 21:17:32
2025-01-01 21:17:33
2025-01-01 21:17:34
```

6.5.2. Case of Error Occurrence

Nothing.

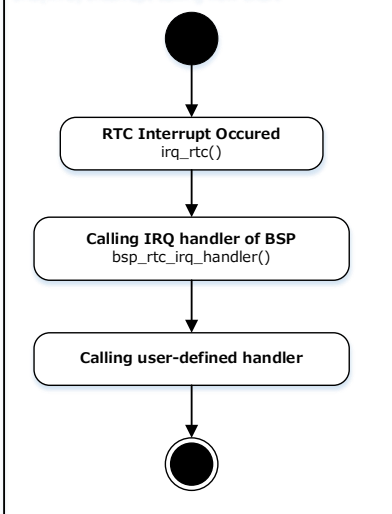
7. Activity diagram

7.1. main

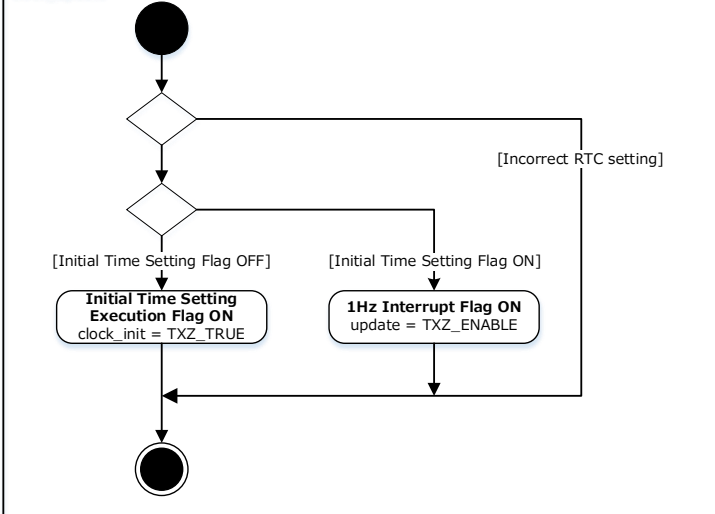


7.2. Interrupt

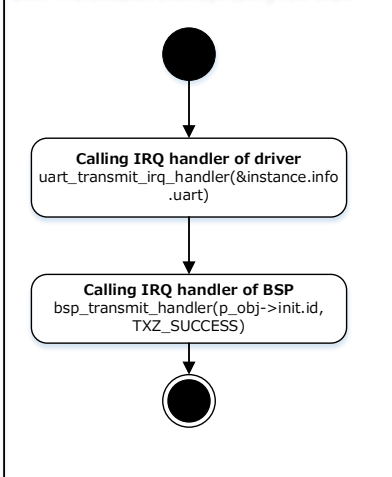
1Hz(RTC) Interrupt calling flow chart



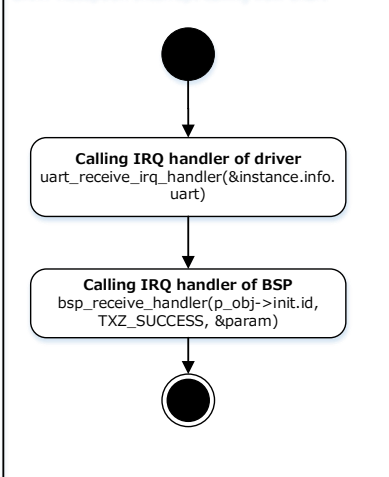
clock_update



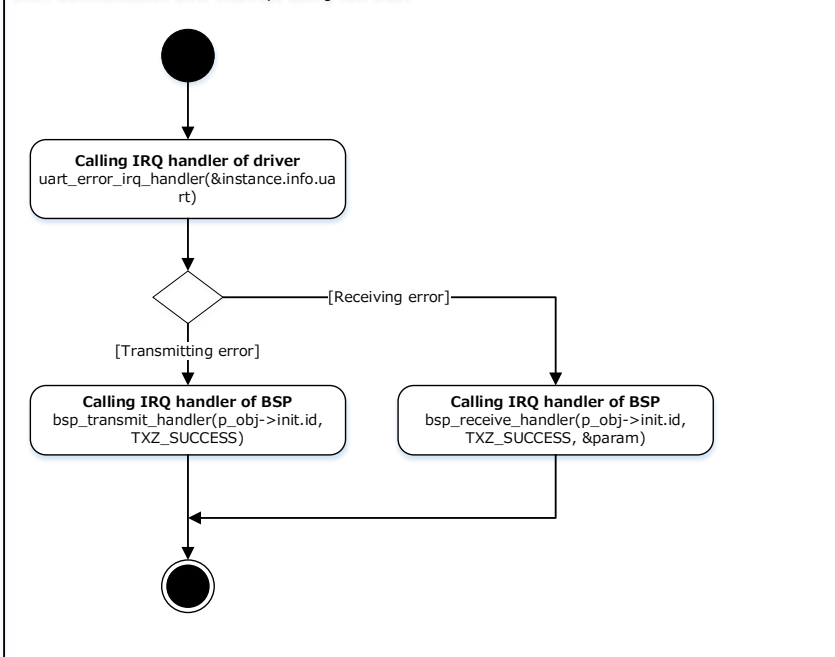
UART Transmission Interrupt calling flow chart



UART Reception Interrupt calling flow chart



UART Communication Error Interrupt calling flow chart



8. Revision History

Revision	Date	Description
1.0	2025-10-30	First release

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