

# Application Note

## RTC UART LED

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## 1. Preface

This application note describes the sample software of RTC\_UART\_LED using Real Time Clock (RTC) and Universal Asynchronous Receiver Transmitter (UART). 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
T32A	32-bit Timer Event Counter

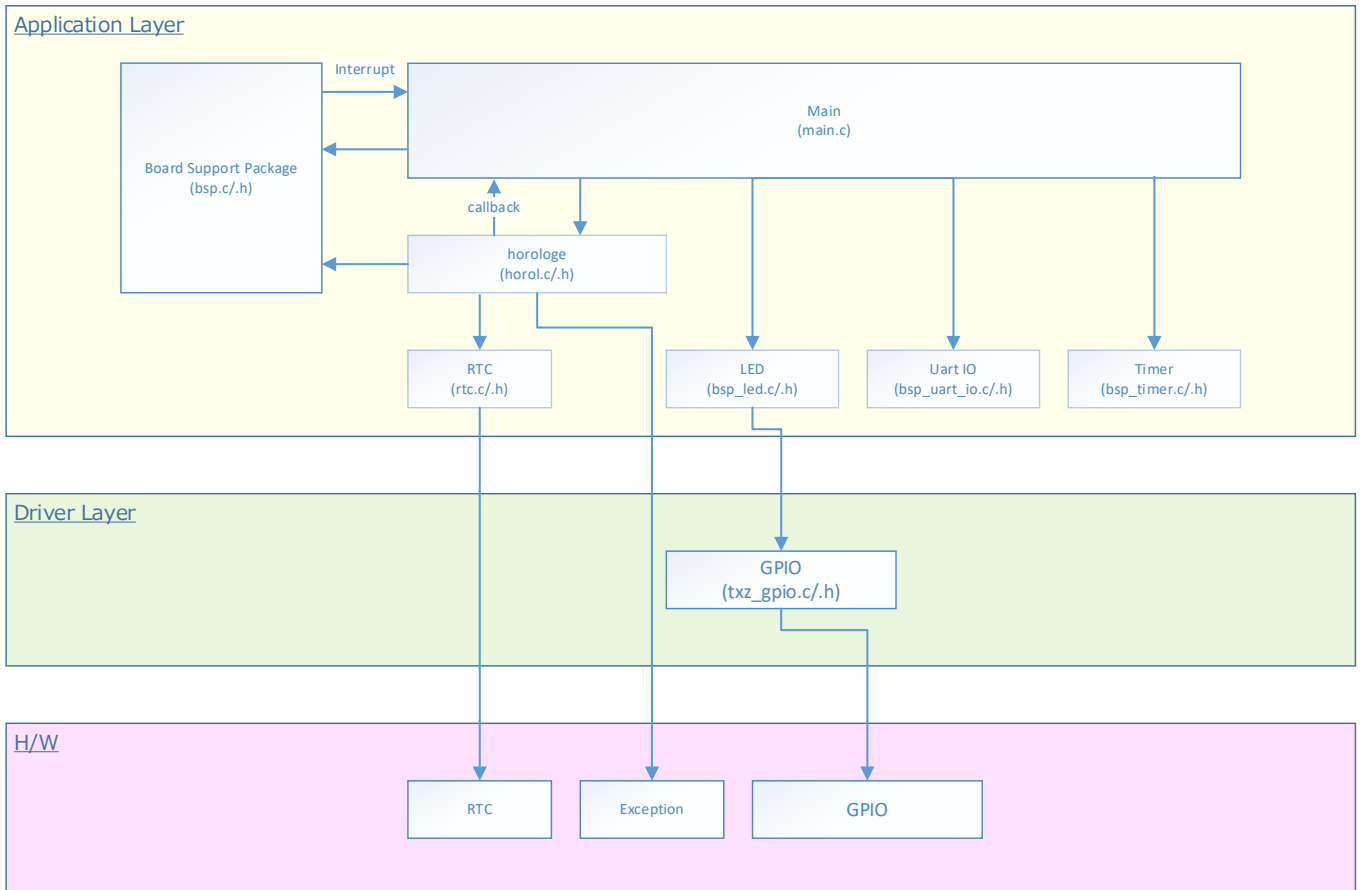
## 3. Reference Document

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 manual to be used.

## 4. Target Sample Program

Sample Program	Outlines
RTC_UART_LED	Sample of Real Time Clock (RTC) function

## 5. Configuration Diagram



## 6. Sample Program: RTC\_UART\_LED

This sample software outputs time information to the terminal software using RTC function.

### 6.1. Outlines of Operation

Time information is output to the terminal software using the RTC function, and a corresponding BSP\_LED\_0 is blinked by the RTC cycle interrupt.

### 6.2. Function to Use

The functions to use are as follows.

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

IP	Channel	Objective
UART	BSP_UART_0	Communication with the terminal software
PORT	BSP_LED_0	LED control

RTC is set as follows.

RTC setting:

Write whether 12 or 24 hours: 24 hours

Time initial value: 2021-01-01 00:00:00

Display setting:

BSP\_LED\_0 blinking timing: 500msec

Time display updating timing: 1sec

### 6.3. Interrupt to Use

Interrupt	Outlines
RTC Interrupt	RTC cycle interrupt
UART Interrupt	UART reception interrupt
	UART transmission interrupt
	UART ERROR interrupt
Timer Interrupt	Interval timer interrupt

### 6.4. Configuration

“CFG\_HOROL\_HOUR\_NOTATION” configuration setting

Configuration	Current Value	Description
CFG_HOROL_HOUR_NOTATION	RTC_HOUR_NOTATION_24	24-hour display
	RTC_HOUR_NOTATION_12	12-hour display

### 6.5. Example of Terminal Software Output

#### 6.5.1. Normal Operation

2017-01-01 21:17:30

#### 6.5.2. Case of Error Occurrence

Nothing.

## 7. Revision History

Revision	Date	Description
1.0	2021-11-02	First release

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