# Application Note


# RMC


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# Table of Contents

## 1. Preface

This application note describes sample software for the RMC function using the rmc_driver.
This document helps the user check operation of a product under development and develop its program.

## 2. Technical Term

| Term/Abbreviation | Definition |
|---|---|
| RMC | Remote Control |
| BSP | Board Support Package |
| 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<br>MCU User Guide | Refer to the MCU user manual to be used. |
| Driver API list | Refer to the MCU Doc folder to be used. |

# 4. Target Sample Program

| Sample Program | Outline |
|---|---|
| RMC | Sample program of RMC function |

# 5. Configuration Diagram
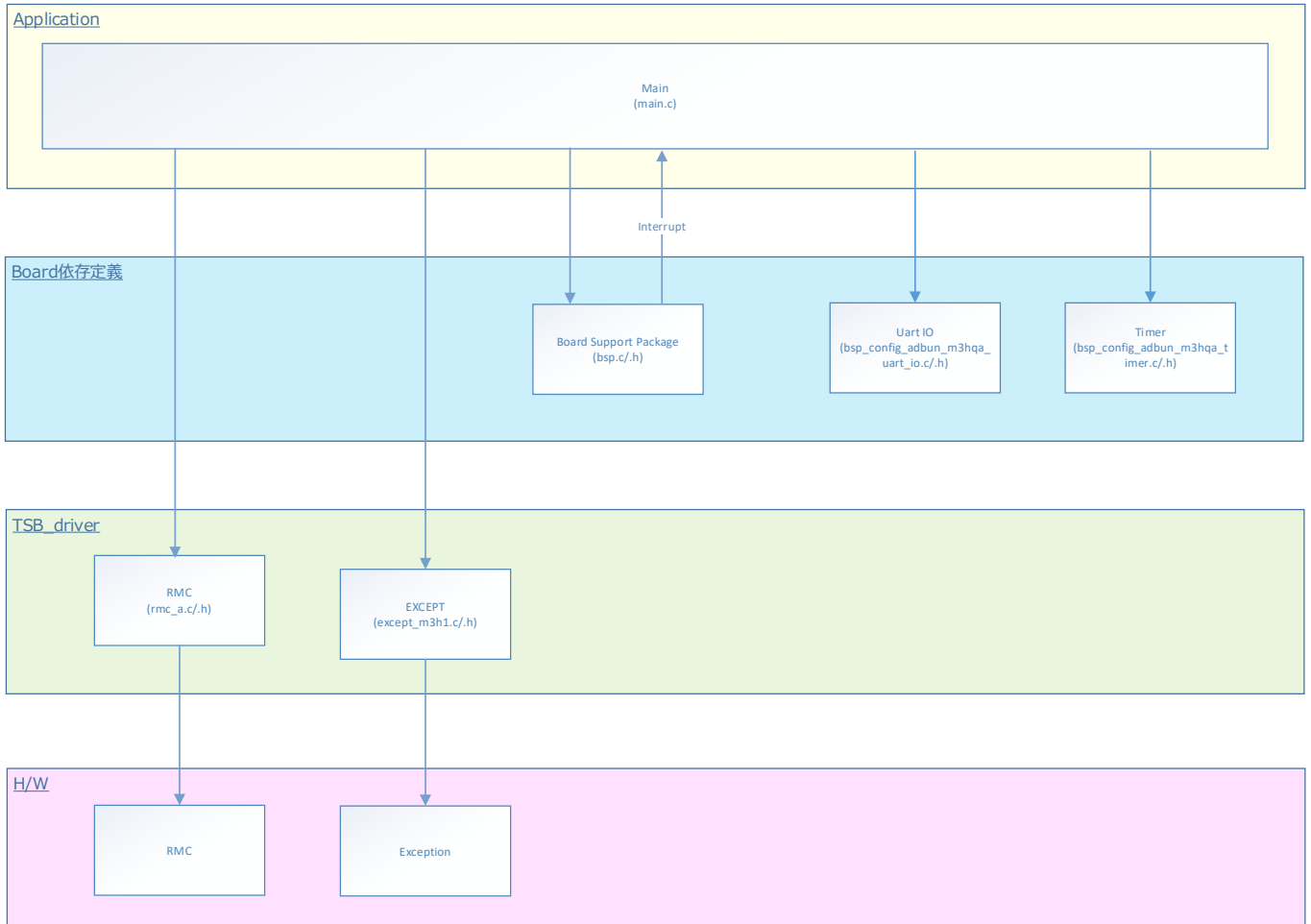
# 6. Sample Program：RMC

This sample software for RMC.

## 6.1. Outlines of Operation

The information received by RMC is output to the terminal emulator.
The corresponding reception formats are as follows.
　NEC format
　TOSHIBA format
　AEHA format　(Association for Electric Home Appliances)
When the remote control mode is received, the log is output according to each format.

## 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 |
|---|---|---|
| RMC | BSP_RMC_1 | For remote control reception |
| UART | BSP_UART_1 | For terminal emulator communication (Outputs log) |

## 6.3. Interrupt to Use

| Interrupt | Outlines |
|---|---|
| INTRMC0 | RMC ch0 Remote control interrupt. Remote control reception |
| INTUART0RX | UART ch0 Receive interrupt for terminal emulator |
| INTUART0TX | UART ch0 Transmission interrupt for terminal emulator |
| INTUART0ERR | UART ch0 Error interrupt for terminal emulator |

## 6.4. Configuration

"main.c" configuration setting.

| Configuration | Current Value | Description |
|---|---|---|
| Support Format | NEC Format | Default operation.<br>Please switch so that you can check the operation. |

## 6.5. Example of Terminal Emulator Output

### 6.5.1. NEC format / TOSHIBA format

```
Customer Code
=>00000010:0x02
=>11111101:0xFD
Data Code
=>01001000:0x48
=>10110111:0xB7
```

### 6.5.2. AEHA format

```
Remocon Code
=>00110100:0xC2
=>01001010:0x25
=>10010000:0x90
=>01010100:0xA2
=>11000100:0x32
```

# 7. RMC Driver

## 7.1. List of driver

The RMC is controlled by using the following interface.
For an example of use, refer to the source code.

| Driver | Control Outlines |
|---|---|
| rmc_init | Build an object |
| rmc_deinit | Discard the object |
| rmc_enable | Enable RMC |
| rmc_disable | Disable RMC |
| rmc_rx_enable | Enable reception |
| rmc_rx_disable | Disable reception |
| rmc_get_status | Get status |
| rmc_get_data | Get received data |

## 7.2. Details

See "3. Reference Documents" for more information.

## 8. Revision History

| Revision | Date | Description |
|----------|------|-------------|
| 1.0 | 2022-04-08 | First release |

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## RESTRICTIONS ON PRODUCT USE

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