

# Application Note

## RAMParity

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## 1. Preface

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

## 2. Technical Term

| Term/Abbreviation | Definition                                  |
|-------------------|---|
| CG                | Clock Control and Operation Mode            |
| RAMP              | RAM Parity                                  |
| UART              | Universal Asynchronous Receiver Transmitter |

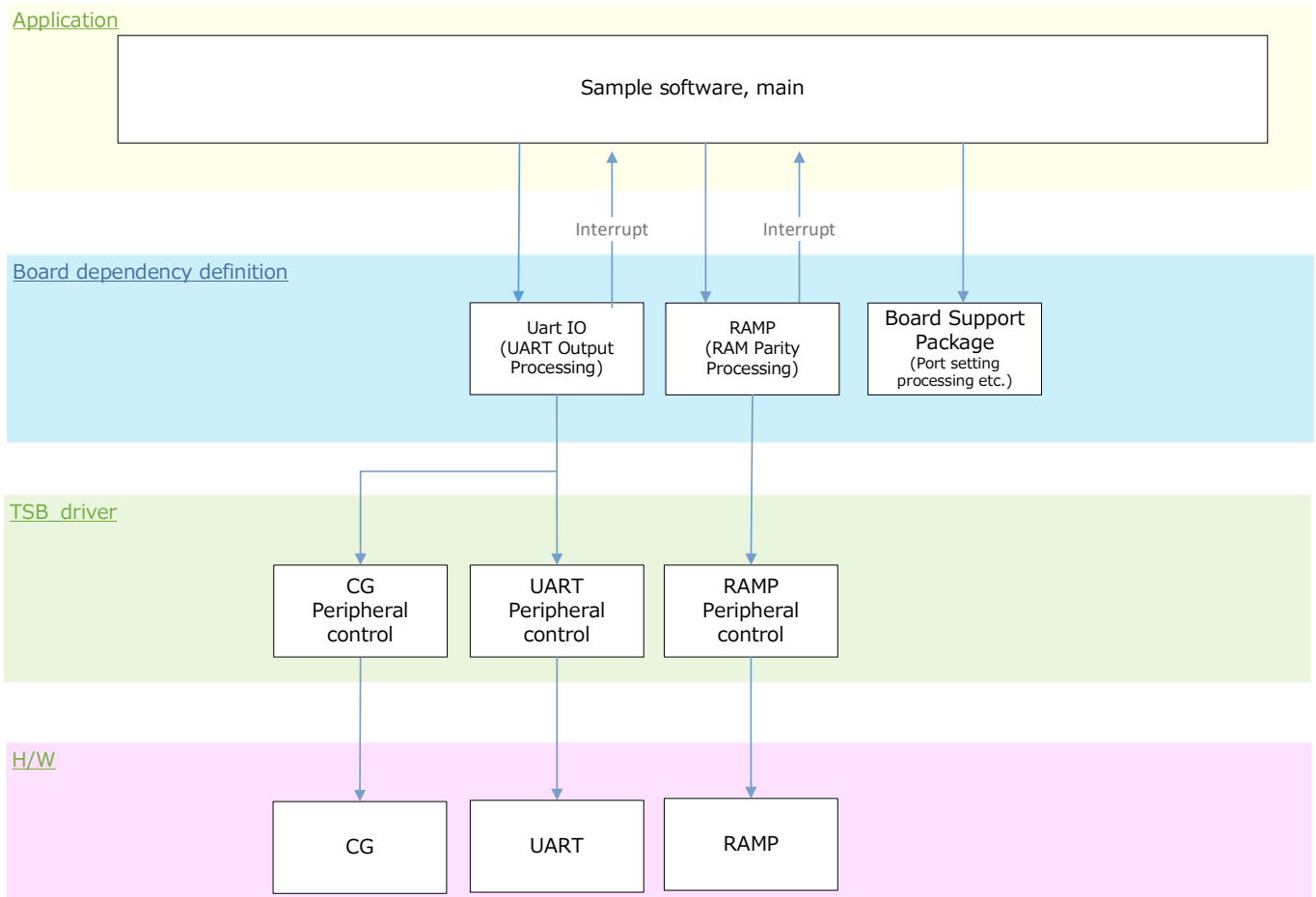
## 3. Reference Document

| 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<br>MCU User Guide | Refer to the MCU user guide to be used.              |

## 4. Target Sample Program

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

## 5. Configuration Diagram



## 6. Sample Program: RAMParity

This is sample software that saves the character string input from the terminal emulator by adding parity to the RAM using the write command, and then uses a read command to check the parity of the data stored in RAM and displays it to the terminal emulator.

### 6.1. Outlines of Operation

If a Command is entered, the process will be performed according to the entered Command.

Use the write command to add parity to RAM and save it.

Use the read command to check the parity of the data saved in RAM and display it on the console.

### 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                           |
|------|------------|-------------------------------------|
| UART | BSP_UART_1 | For terminal emulator communication |

### 6.3. Interrupt to Use

| Interrupt | Outlines                    |
|-----------|-----------------------------|
| (Note1)   | RAMP RAM Parity interrupt   |
| (Note2)   | UART Receive interrupt      |
| (Note3)   | UART Transmission interrupt |
| (Note4)   | UART Error interrupt        |

Note1: For SBK-M471,

"INTPARI0".

Note2: For SBK-M471,

"INTSC0RX".

Note3: For SBK-M471,

"INTSC0TX".

Note4: For SBK-M471,

"INTSC0ERR".

### 6.4. Configuration

"main.c" configuration setting.

| Configuration   | Soft Definition Name | Current Value (Defaults) | Description   |
|-----------------|----------------------|--------------------------|---|
| Write DATA MAX. | BSP_WRITE_DATA_MAX   | 10                       | Number of characters that can be written (Unit: characters)             |
| RAM TOP ADDRESS | bsp_ram1             | 0x20001000               | Note: When changing the address, it will be placed in RAM Area 0 and 1. |

## 6.5. Example of Terminal Emulator Output

### 6.5.1. Normal Operation

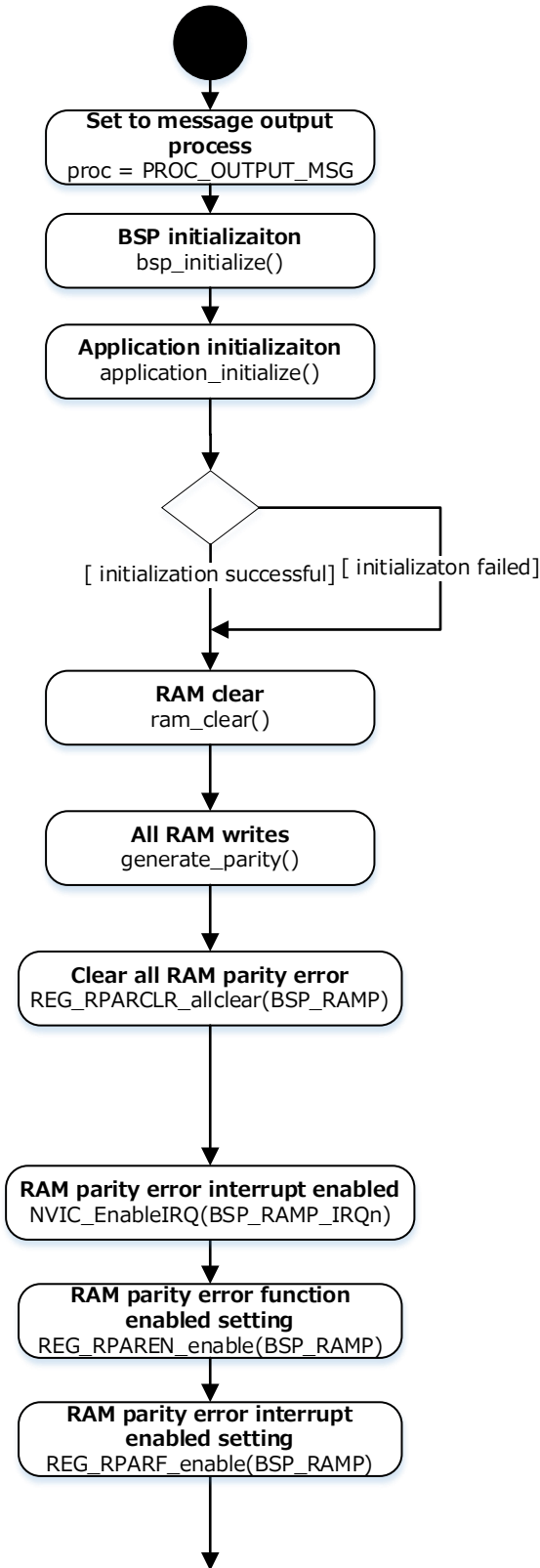
```
command > write 0  
write data > 0  
command > read  
read data > 0
```

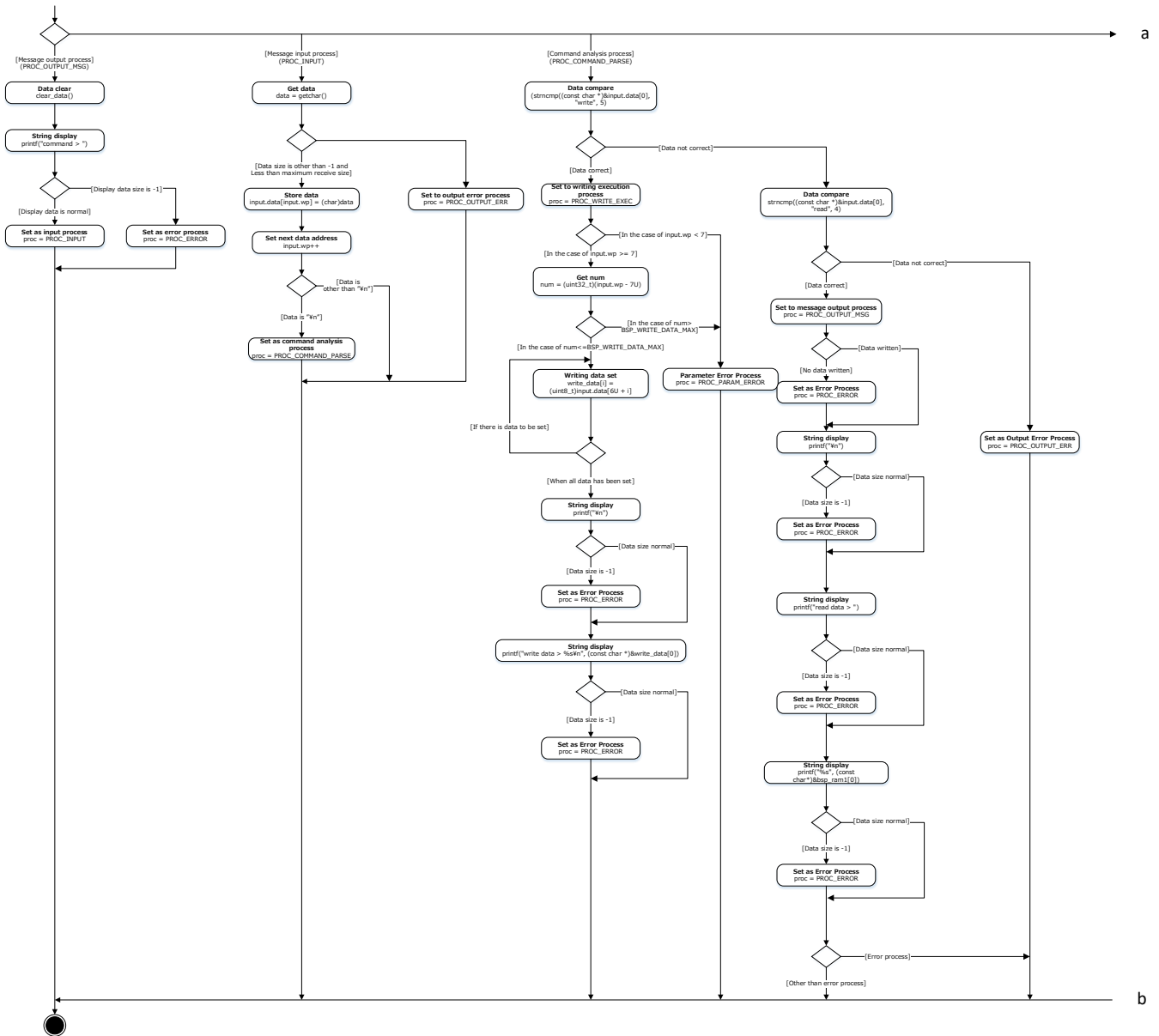
### 6.5.2. Case of Error Occurrence

```
command > A  
Command Error !!  
  
command > write 0123456789  
write data > 012345679  
  
command > write 0123456789A  
Parameter Error !!
```

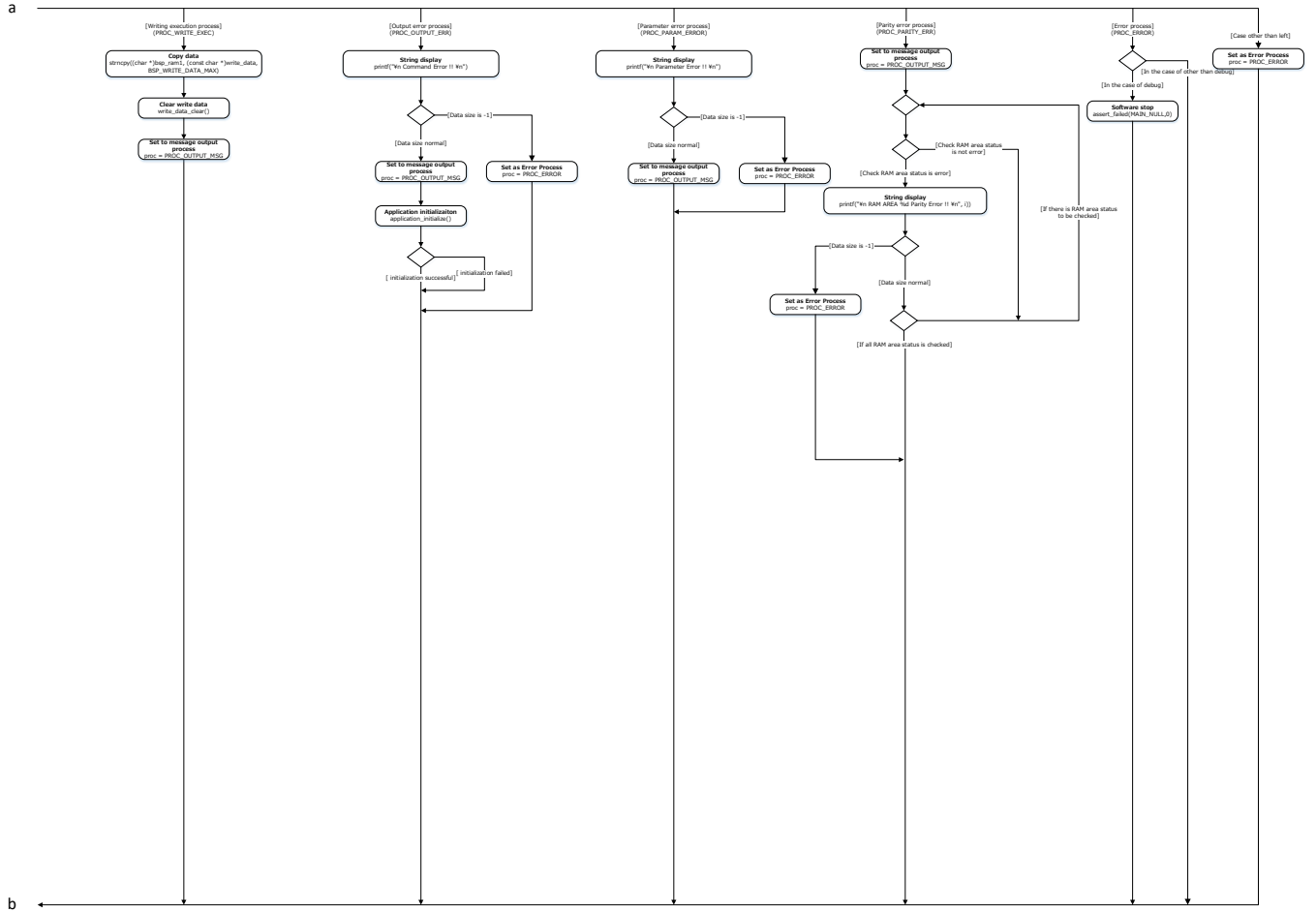
## 7. Activity diagram

### 7.1. main

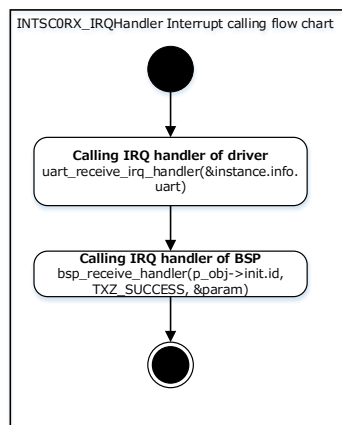
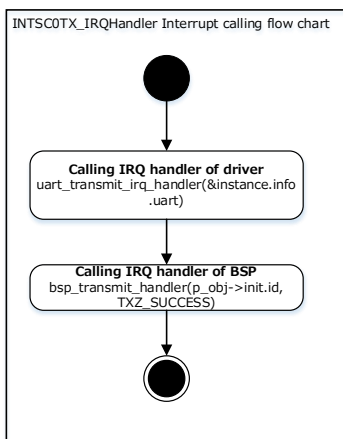
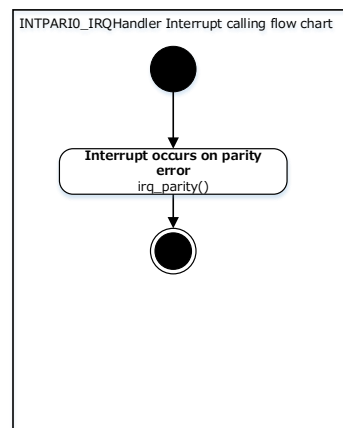
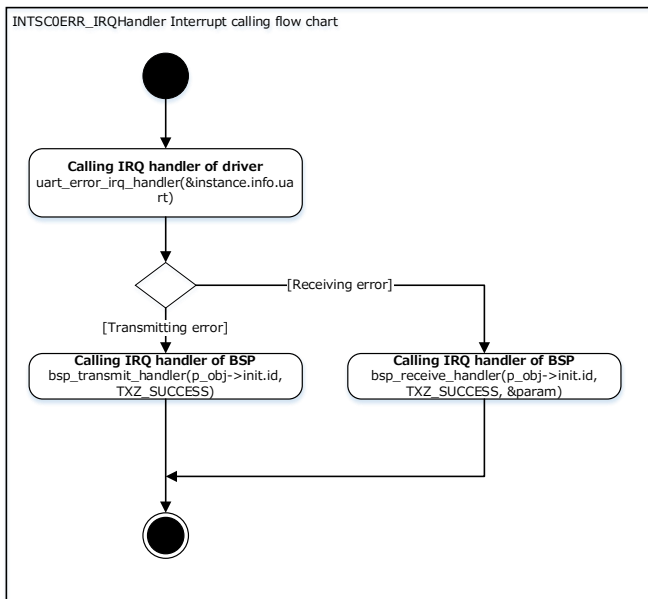
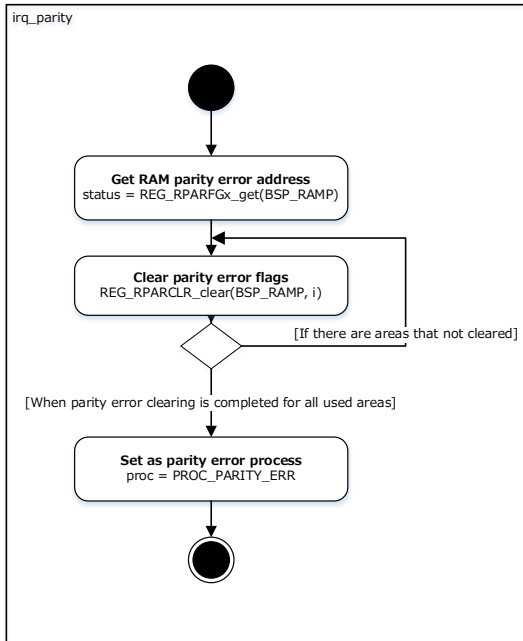








## 7.2. Interrupt



## 8. Revision History

| Revision | Date       | Description   |
|----------|------------|---------------|
| 1.0      | 2025-01-20 | First release |

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