

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
BSP	Board Support Package
UART	Universal Asynchronous Receiver Transmitter

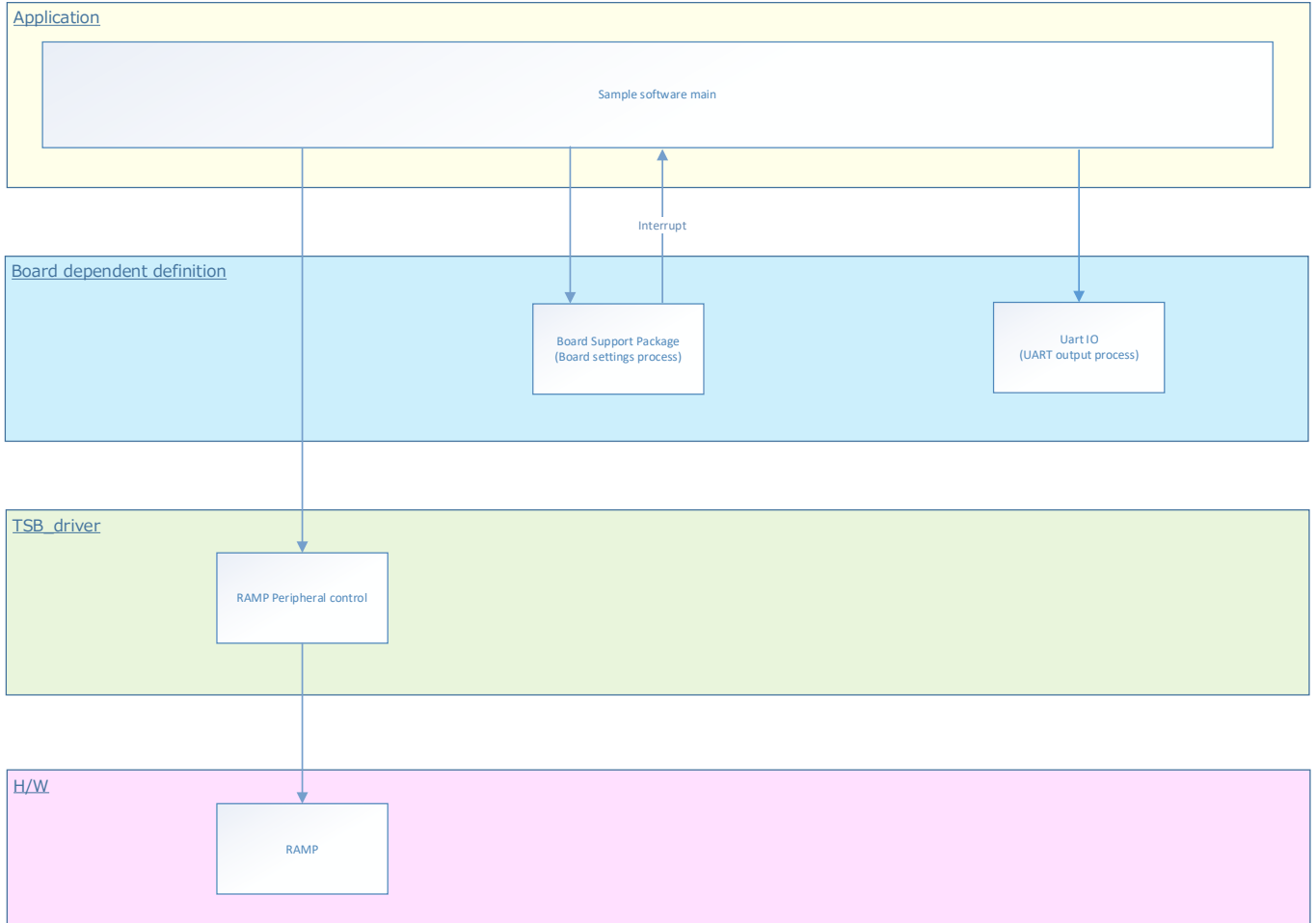
3. Reference Document

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
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 software by adding parity to the RAM using the write command, and displays the data saved in the RAM by the read command after performing a parity check.

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 channel, refer to the MCU user guide.

IP	Channel	Objective
UART	BSP_UART_1	For terminal emulator communication (Used for operation Log output and data input)

6.3. Interrupt to Use

Interrupt	Outlines
INTPARI	RAMP RAM Parity interrupt
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
Write DATA MAX	10 characters	-
RAM TOP ADDRESS	0x20001000	RAM name: ram1, when changing the address, place it in RAM Area 0,1

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. RAMP Driver

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

Driver	Control Outlines
REG_RPAREN_enable	Parity error interrupt enabled
REG_RPAREN_disable	Parity error interrupt disabled
REG_RPARFGx_get	RAM Parity Get error status flag
REG_RPARCLR_clear	RAM Parity Clear error status flag
REG_RPAREADx_get	RAM Parity Get error address

8. Revision History

Revision	Date	Description
1.0	2023-06-28	First release

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