Application Note

DAC

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1. Preface

This application note describes sample software for the monitoring functions of a digital-to-analog converter (DAC).
This document helps the user check operation of a product under development and develop its program.

2. Technical Term

Term/Abbreviation	Definition
DAC	Digital-to-Analog Converter
BSP	Board Support Package
UART	Universal Asynchronous Receiver Transmitter

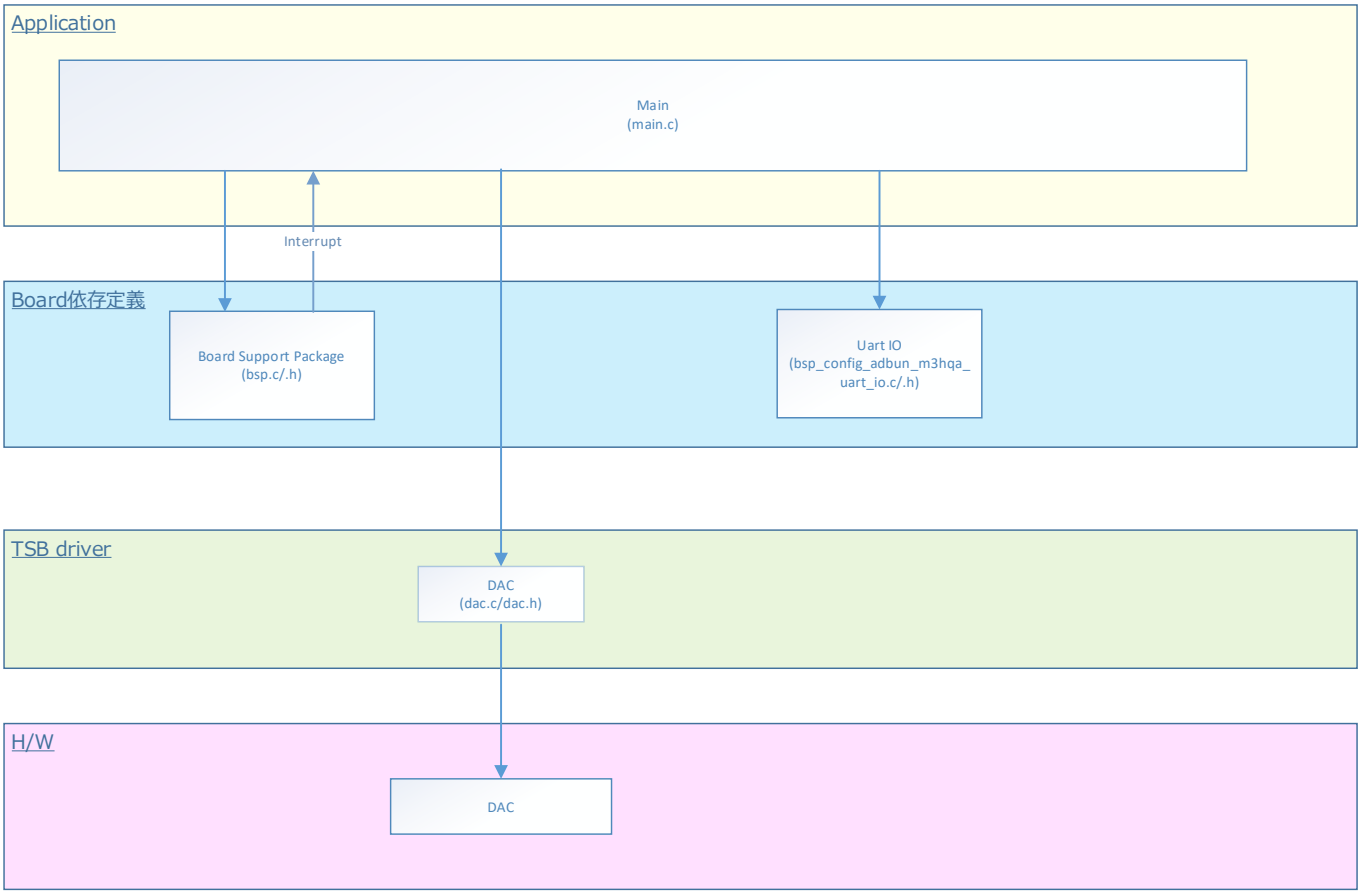
3. Reference Document

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 manual to be used.
Driver API list	Refer to the MCU Doc folder to be used.

4. Target Sample Program

Sample Program	Outline
DAC	Sample program of DAC function

5. Configuration Diagram



6. Sample Program：DAC

This is sample software that outputs the analog voltage corresponding to the conversion value input from the terminal emulator.

6.1. Outlines of Operation

Convert (hex 8bit) the data input to the terminal emulator and set it.
The analog voltage corresponding to the converted value is output to BSP_DAC_1.
If the input data exceeds Data Max, if it is not in the specified format, an error will be output if it is out of the Data range.

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
ADC	BSP_DAC_1	For analog voltage value output
UART	BSP_UART_1	Used for terminal emulator communication data entry

6.3. Interrupt to Use

Interrupt	Outlines
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
Data Max	5	5 characters
Data Range	0(0x00) to 255(0xFF)	It is a numerical range

6.5. Example of Terminal Emulator Output

6.5.1. Normal Operation

```
Input > 128
Input > 0xC0
```

6.5.2. Case of Error Occurrence

```
Input > 0x000
Parameter Error!!
```

7. DAC Driver

7.1. List of driver

The A_ENC32 is controlled by using the following interface.
For an example of use, refer to the source code.

Driver	Control Outlines
REG_DAC_DAxREG_set	Set DAxREG value
REG_DAC_enable	Set DAC Control Enable
REG_DAC_disable	Set DAC Control Disable

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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