

Application Note

DAC

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1. Preface

This application note describes sample software DAC using digital/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
BSP	Board Support Package
CG	Clock Control and Operation Mode
DAC	Digital to Analog Converter
ADC	Analog to Digital Converter
UART	Universal Asynchronous Receiver Transmitter

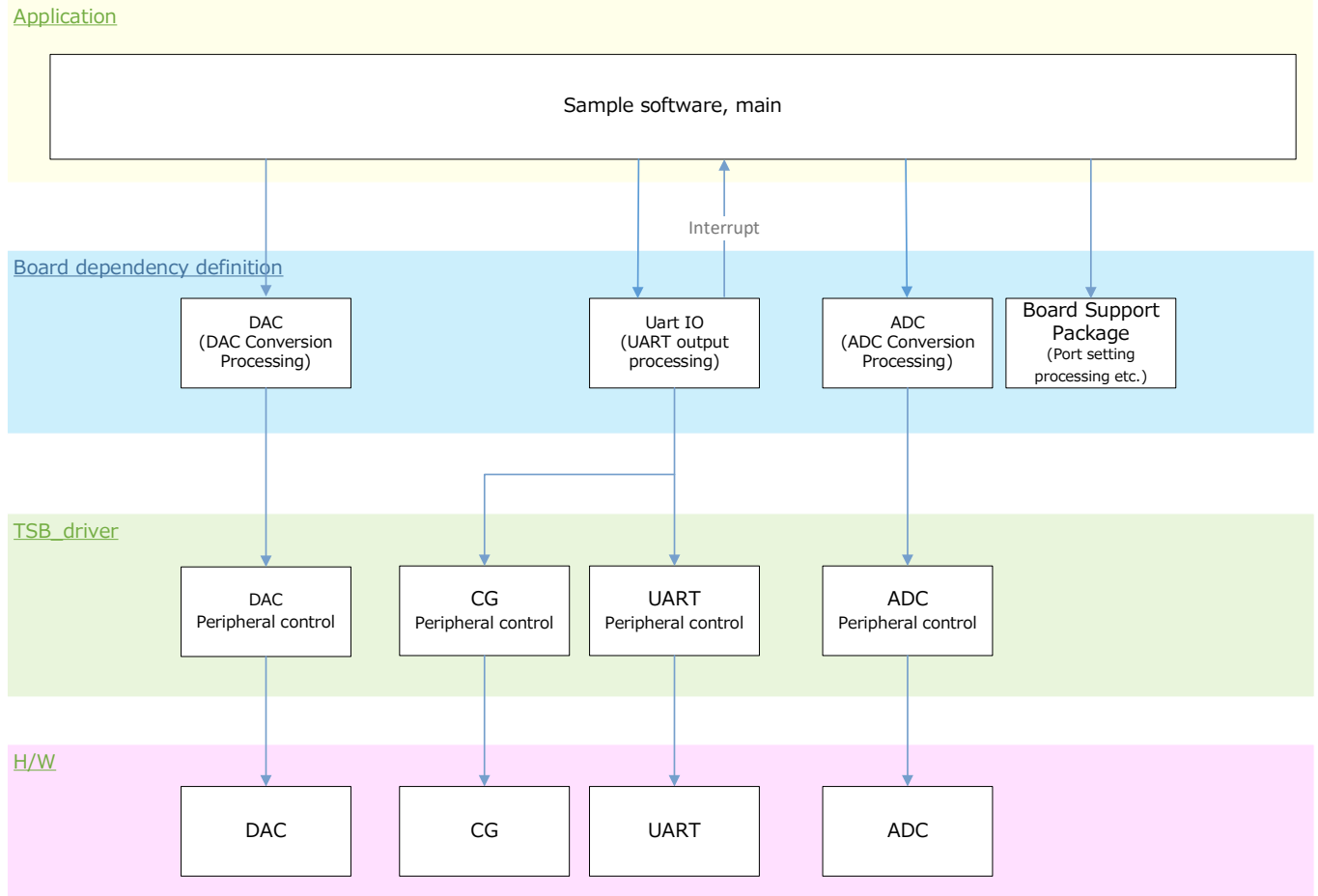
3. Reference Document

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.
Driver API List	Refer to the Doc folder

4. Target Sample Program

Sample Program	Outline
DAC	Sample program for DAC function

5. Configuration Diagram



6. Sample Program: DAC

This sample software outputs an analog voltage corresponding to a value entered from a terminal software via DAC conversion, then converts the output voltage using the ADC and displays the conversion result.

6.1. Outlines of Operation

Converts data entered from the terminal software into an 8-bit hexadecimal value and sets it to the DAC.

The corresponding analog voltage is output from BSP_DAC_1.

The output voltage is converted by the ADC, and the conversion result is displayed on the terminal software.

An error message is displayed if the input data format is invalid or the data value is out of 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 guide.

IP	Channel	Objective
DAC	BSP_DAC_1	Output the analog voltage
UART	BSP_UART_1	Terminal soft communication

6.3. Interrupt to Use

For details, please refer to the “Interrupt List by Sample” in the MCU User’s Manual.

6.4. Configuration

Configuration setting.

Configuration	Soft Definition Name	Current Value (Defaults)	Description
Data range	CFG_DATA_RANGE_MIN	0x00	Minimum input value
	CFG_DATA_RANGE_MAX	0xFF	Maximum input value

6.5. Example of Terminal Emulator Output

6.5.1. Normal

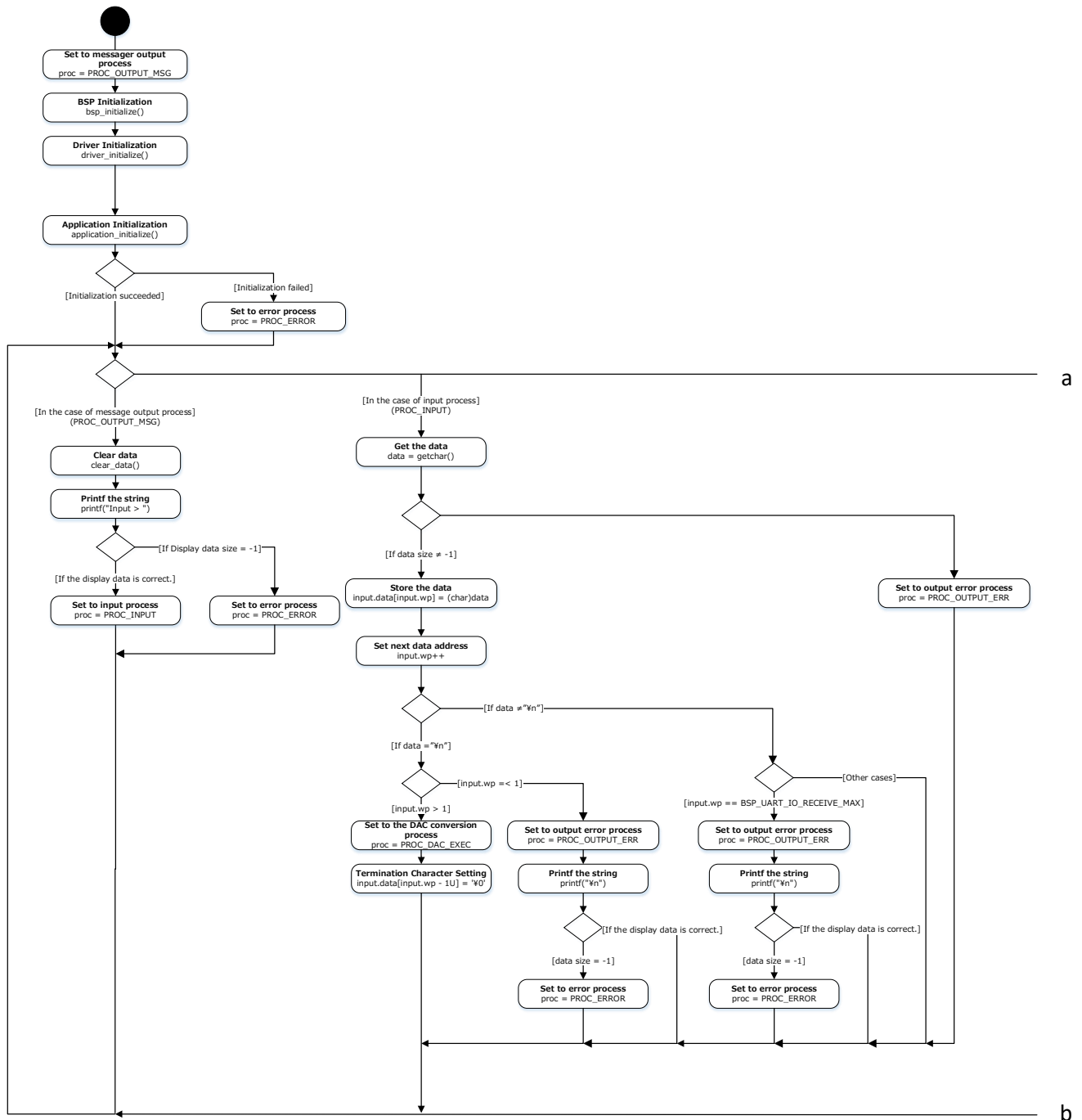
```
Input > 128
Convert Result Value[DAC0]:0x080
Input > 0xC0
Convert Result Value[DAC0]:0x0C0
```

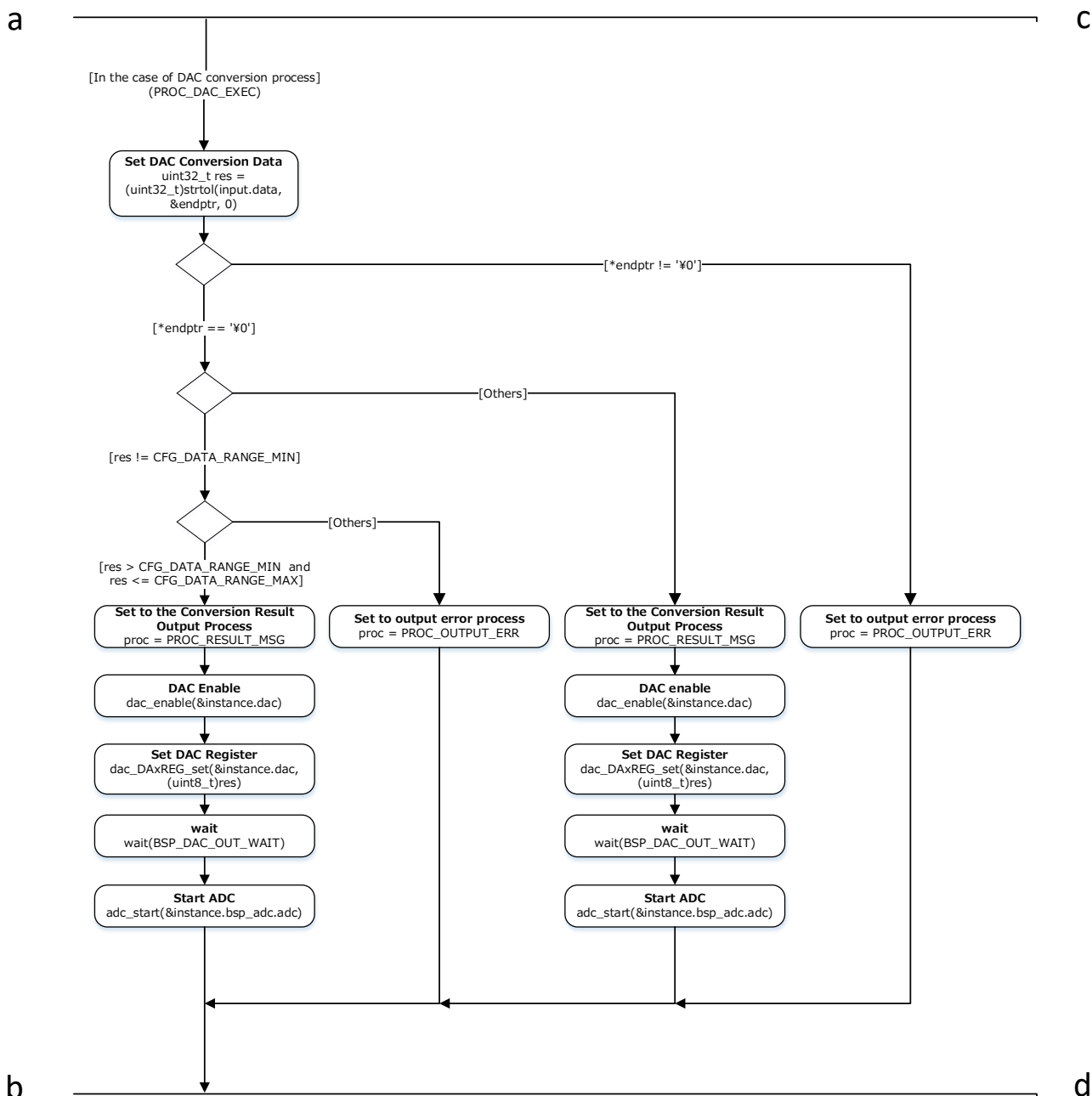
6.5.2. Error

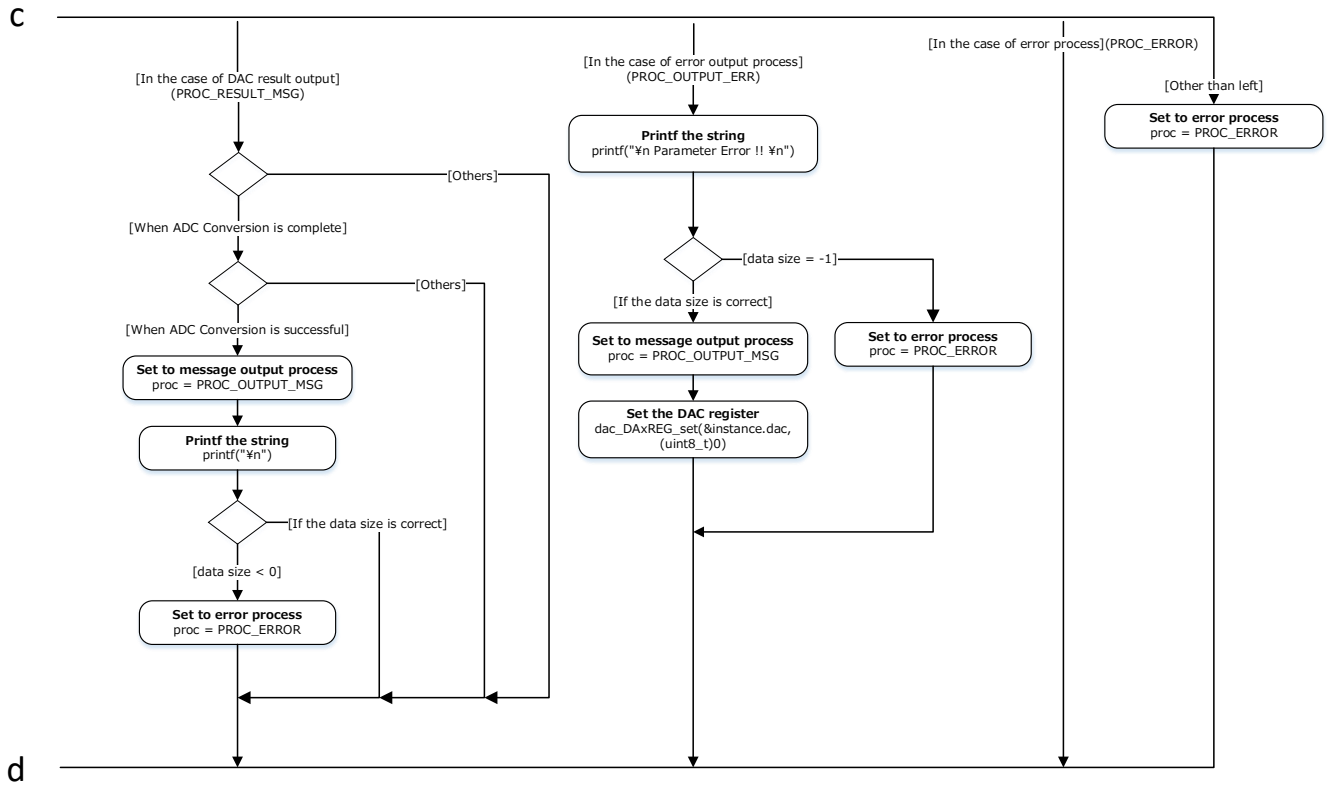
```
Input > 0x000
Parameter Error!!
```

7. Activity diagram

7.1. main

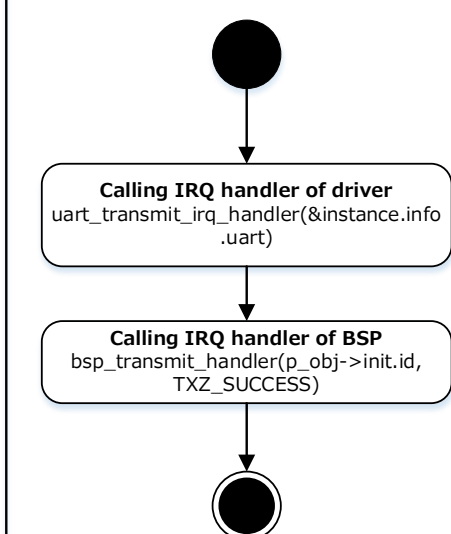




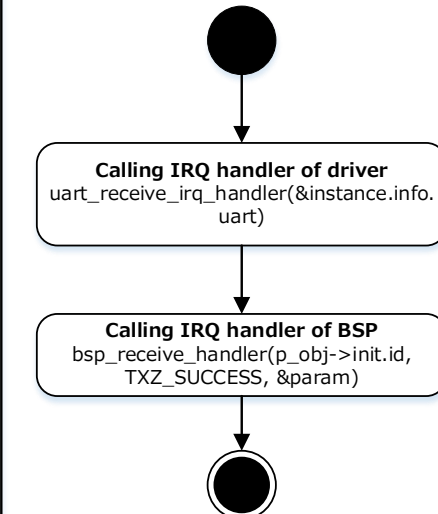


7.2. Interrupt

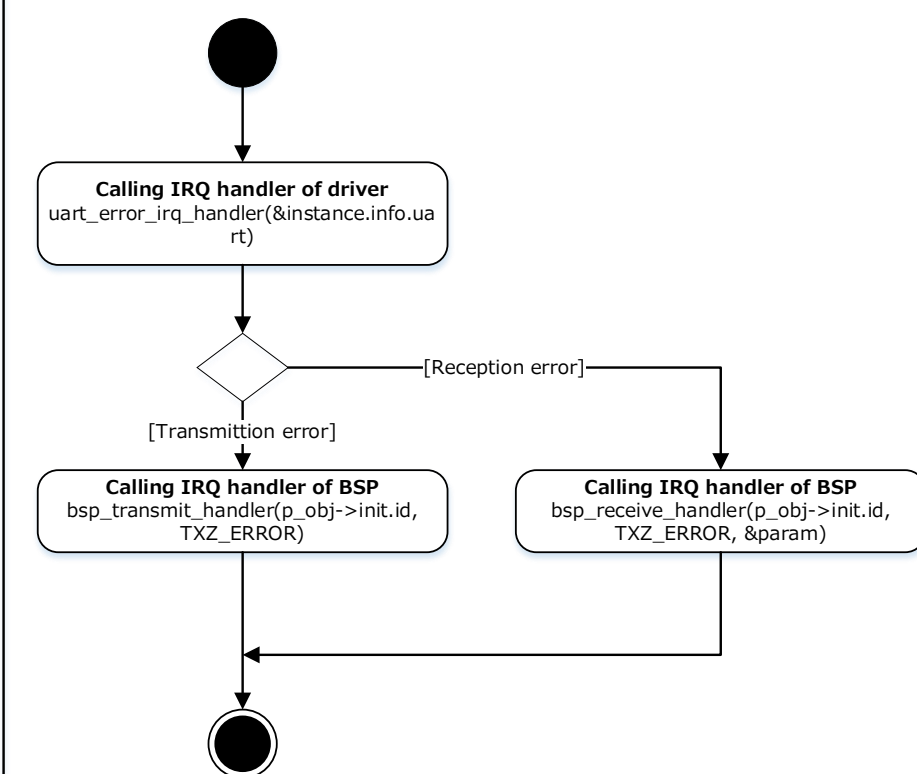
UART Transmission Interrupt calling flow chart



UART Reception Interrupt calling flow chart



UART Communication Error Interrupt Calling Flow



8. Revision History

Revision	Date	Description
1.0	2026-07-30	First release

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