Application Note

DNF

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1. Preface

This application note describes sample software DNF by the digital noise filter circuit (DNF).
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
DNF	Digital Noise Filter Circuit
EXCEPT	Except

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.

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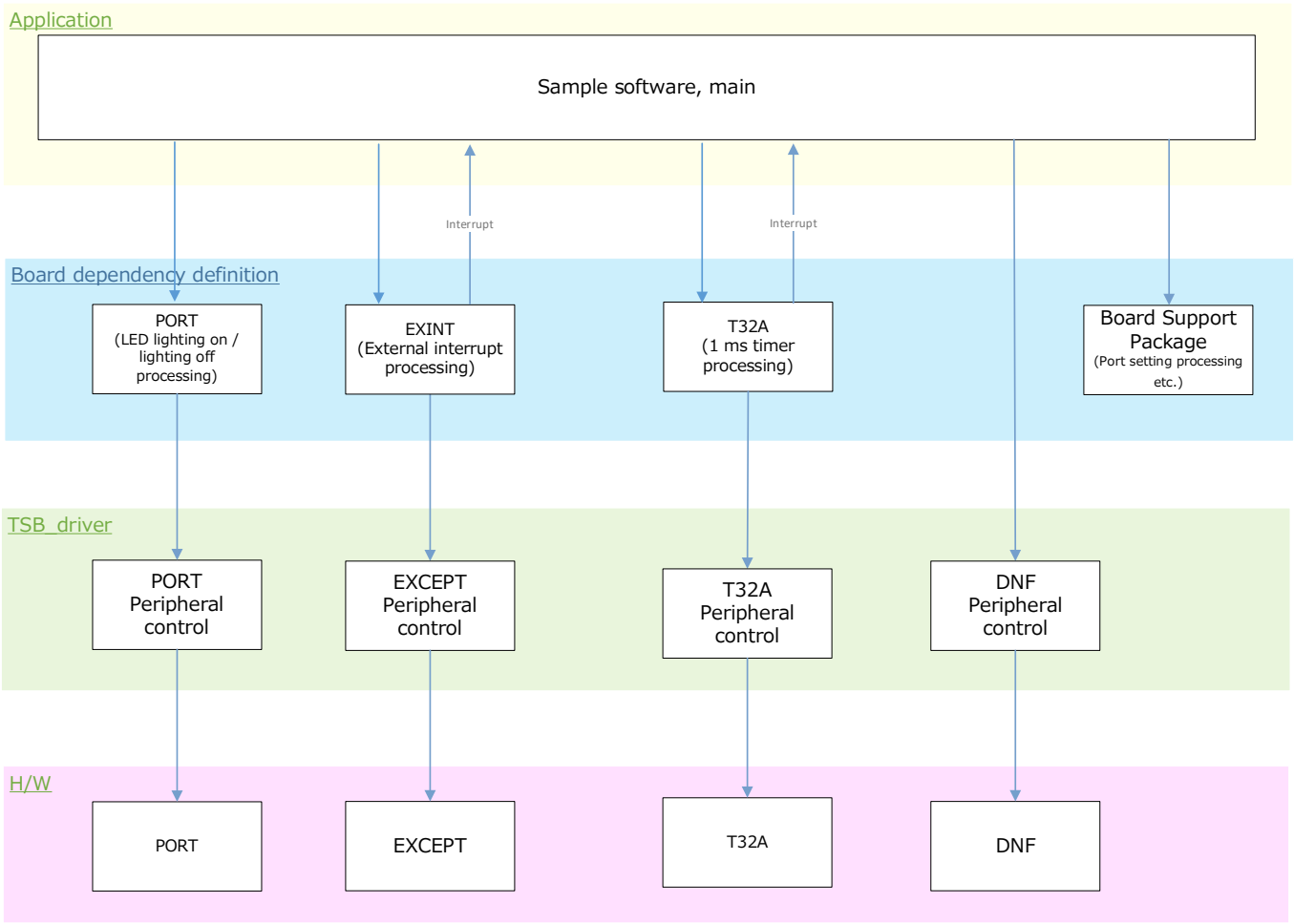
4. Target Sample Program

Sample Program	Outline
DNF	Sample program of DNF function

5. Configuration Diagram



6. Sample Program: DNF

This is sample software that displays the external signal interrupt detection by pressing Push-Switch by switching the LED lighting.

6.1. Outlines of Operation

BSP_LED_1 is controlled when BSP_ PSW_5 is pressed.
If you press BSP_ PSW_5 when BSP_LED_1 is off, BSP_LED_1 will turn on.
If BSP_ PSW_5 is pressed while BSP_LED_1 is on, BSP_LED_1 will turn off.
Detects external signal interrupts caused by pressing Push-Switch via DNF.

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
PORT (Push-Switch)	(Note1): BSP_ PSW_5	(Note1): For event triggers
PORT (LED)	BSP_LED_1	For operation check
T32A	BSP_T32A_TIMER_1	For Interval timer

Note1: Some boards use a switch as a substitute. For details, please refer to the MCU User's Manual.

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	Current Value (Defaults)	Description
Noise filter clock	CFG_DNF_NOISE_FILTER_CLOCK	NFCKS_CLOCK_FC_2	fc divider (fc/2) For the setting values, see the dnf.h file.

6.5. Example of Terminal Emulator Output

Nothing.

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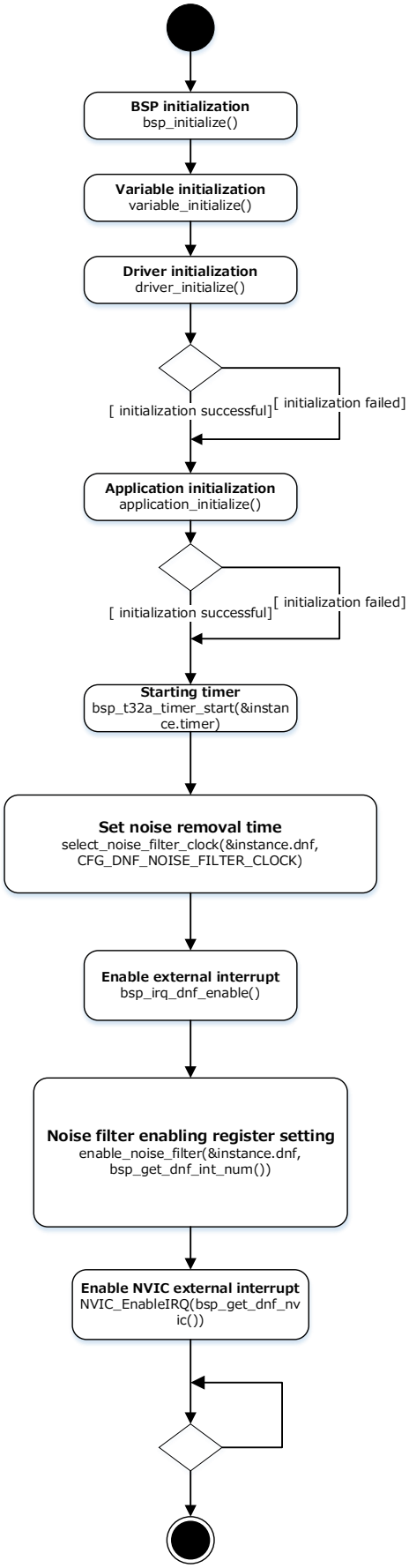
7. Activity diagram

7.1. main



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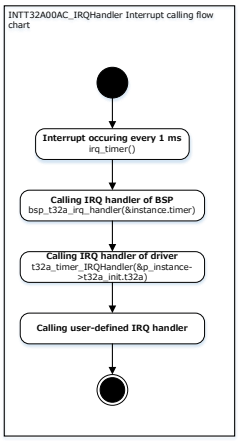
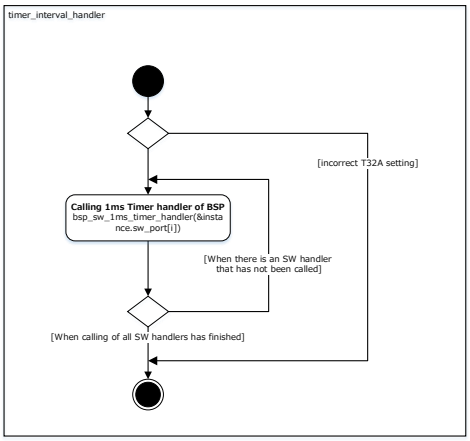
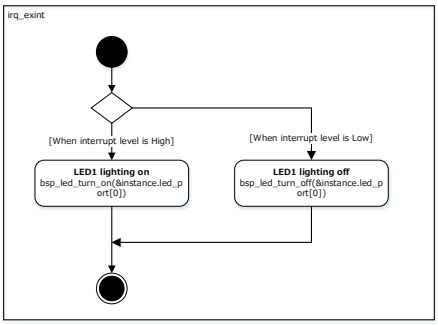
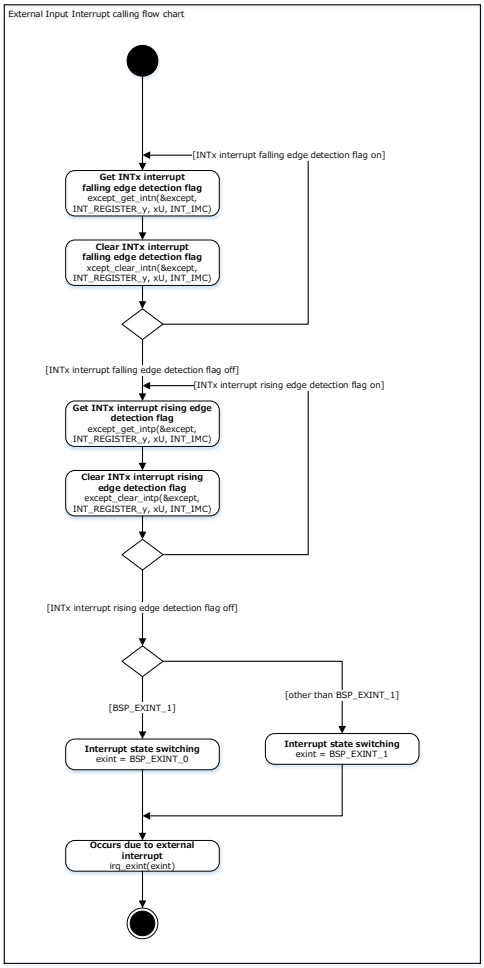
7.2. Interrupt









For x and y details, please refer to the “Activity Diagram Symbol” in the MCU User’s Manual

8. Revision History

Revision	Date	Description
1.0	2025-01-20	First release
1.1	2025-10-30	6.3 Interrupt to Use Added M3H Interrupt Name.
1.2	2026-07-30	6.3 Interrupt to Use Detailed information is transcribed into the User's Manual

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