Detailed Design of External interrupt Driver

Team X

Contents

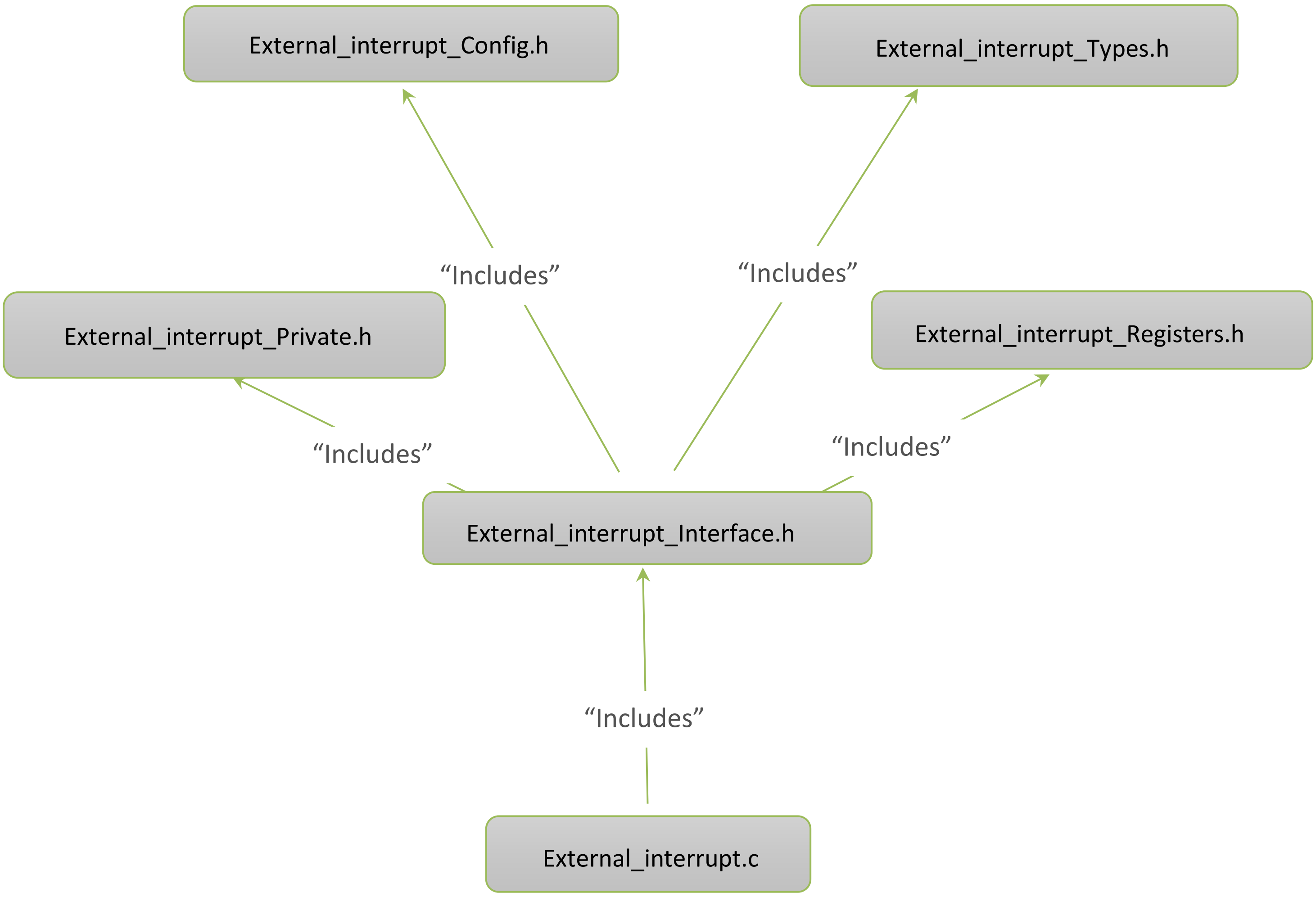
Introduction and functional overview:

This document specifies requirements on the module External interrupt Driver.

The external interrupt driver initializes External interrupt0 , initializes External interrupt1, and initializes External interrupt2

File structure:

The LCD module shall comply with the following file structure:


External_interrupt_Config.h
External_interrupt_Types.h
"Includes"
"Includes"
External_interrupt_Private.h
External_interrupt_Registers.h
"Includes"
"Includes"
External_interrupt_Interface.h
"Includes"
External_interrupt.c

Requirement's traceability:

Requirement	Description	Satisfied by
[SRS_External interrupt_1001]	The External interrupt driver shall provide a service that initializes the External interrupt 0.	[DD_External interrupt_1002] [DD_External interrupt_1003]
[SRS_External interrupt _1002]	The External interrupt driver shall provide a service that initializes External interrupt 1	[DD_External interrupt_1002] [DD_External interrupt_1004]
[SRS_External interrupt _1003]	The External interrupt driver shall provide a service that initializes the External interrupt 2	[DD_External interrupt_1005] [DD_External interrupt_1002]
[SRS_External interrupt_1004]	The External interrupt driver shall provide a service that set call back function	[DD_External interrupt_1001] [DD_External interrupt_1006]

API specification:

Type definitions:

1. **[DD_External interrupt_1001]**

Name:	EN_interrupt_sense_t
Type	Enum
Range:	___
Description:	interrupt sense
Covered requirements:	[SRS_External interrupt_1004]

2. **[DD_External interrupt_1002]**

Name:	E_Error_state
Type	unsigned char
Range:	0…<number of ports>
Description:	check if there error in code or not

Covered requirements:	[SRS_External interrupt_1001], [SRS_External interrupt_1002], [SRS_External interrupt_1003],[SRS_External interrupt_1004]

Function definitions:

1- [DD_External interrupt_1003]

Service name:	External interrupt 0 initialization
Syntax:	E_Error_state MCAL_EXT_INT_0_init(EN_interrupt_sense_t sense)
Sync/Async:	Synchronous
Re-entrancy:	Re-entrant
Parameters (in):	sense. | input interrupt sense
Parameters (out):	none
Parameters (inout):	none
Return type:	E_Error_state
Description:	Function that initializes the External interrupt
Covered requirements:	[SRS_External interrupt_1001]

2- [DD_External interrupt_1004]

Service name:	External interrupt 1 initialization
Syntax:	E_Error_state MCAL_EXT_INT_1_init(EN_interrupt_sense_t sense)
Sync/Async:	Synchronous
Re-entrancy:	Re-entrant
Parameters (in):	sense. | input interrupt sense
Parameters (out):	none
Parameters (inout):	none
Return type:	E_Error_state
Description:	Function that initializes the External interrupt
Covered requirements:	[SRS_External interrupt_1002]

3- [DD_External interrupt_1005]

Service name:	External interrupt 0 initialization
Syntax:	E_Error_state MCAL_EXT_INT_2_init(EN_interrupt_sense_t sense)
Sync/Async:	Synchronous
Re-entrancy:	Re-entrant
Parameters (in):	sense. | input interrupt sense
Parameters (out):	none
Parameters (inout):	none
Return type:	E_Error_state
Description:	Function that initializes the External interrupt
Covered requirements:	[SRS_External interrupt_1003]

4- [DD_External interrupt_1006]

Service name:	Set call back
Syntax:	E_Error_state MCAL_Ext_INT_setCallBack(void(* ptr_to_ISR_ExT_INT_)(void),ext_int interrupt);
Sync/Async:	Synchronous
Re-entrancy:	Re-entrant
Parameters (in):	void(* ptr_to_ISR_ExT_INT_)(void)| pointer to function , interrupt | to external interrupt
Parameters (out):	none
Parameters (inout):	none
Return type:	E_Error_state
Description:	Function that takes address of the function and sends this function to ISR
Covered requirements:	[SRS_External interrupt_1004]