

EXTI Driver for STM32F103

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Chapter 1

Data Structure Index

1.1 Data Structures

Here are the data structures with brief descriptions:

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Chapter 2

File Index

2.1 File List

Here is a list of all documented files with brief descriptions:

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Chapter 3

Data Structure Documentation

3.1 AFIO_t Struct Reference

Data Fields

- uint_32t **AFIO_EVCR**
- uint_32t **AFIO_MAPR**
- uint_32t **AFIO_EXTICR** [4]
- uint_32t **AFIO_MAPR2**

The documentation for this struct was generated from the following file:

- [EXT_INT/EXT_INT.c](#)

3.2 EXTI_CFG_t Struct Reference

Data Fields

- GPIO_t **GPIO_PIN**
- uint_32t **Edge**
- uint_32t **EXTICR_Channel**
- uint_32t **EXTI_Port**
- uint_32t **EXTI_Pin**

The documentation for this struct was generated from the following file:

- [EXT_INT/EXT_INT_cfg.h](#)

3.3 EXTI_t Struct Reference

Data Fields

- uint_32t **EXTI_IMR**
- uint_32t **EXTI_EMR**
- uint_32t **EXTI_RTSR**
- uint_32t **EXTI_FTSR**
- uint_32t **EXTI_SWIER**
- uint_32t **EXTI_PR**

The documentation for this struct was generated from the following file:

- [EXT_INT/EXT_INT.c](#)

Chapter 4

File Documentation

4.1 EXT_INT/EXT_INT.c File Reference

This file is the Implementation for Flash Driver Interface for STM32F103.

```
#include "STD_TYPES.h"
#include "DRCC.h"
#include "DGPIO.h"
#include "DNVIC.h"
#include "EXT_INT.h"
#include "EXT_INT_cfg.h"
```

Data Structures

- struct [EXTI_t](#)
- struct [AFIO_t](#)

Macros

- #define [EXTI](#) (([EXTI_t*](#)) 0x40010400)
Base address of External Interrupt.
- #define [AFIO](#) (([AFIO_t*](#)) 0x40010000)
Base address of Alternative Function Input Output.

Functions

- uint_8t [DEXTI_Init](#) (void)
Function to initialize External Interrupt.
- uint_8t [DEXTI_SetCBF](#) ([CBF_t](#) Call_Back)
Function to Set Call Back Function.
- void [EXTIO_IRQHandler](#) (void)

Variables

- `EXTI_CFG_t EXTI_CFG [NUMOFEXTI]`
- `CBF_t CBF`

4.1.1 Detailed Description

This file is the Implementation for Flash Driver Interface for STM32F103.

Author

Amr (Ibrahimamr222@gmail.com)

Version

0.1

Date

2020-06-05

Copyright

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4.1.2 Function Documentation

4.1.2.1 DEXTI_Init()

```
uint_8t DEXTI_Init (  
    void )
```

Function to initialize External Interrupt.

Parameters

<code>void</code>	
-------------------	--

Returns

`uint_8t` : OK | NOK

4.1.2.2 DEXTI_SetCBF()

```
uint_8t DEXTI_SetCBF (
    CBF_t Call_Back )
```

Function to Set Call Back Function.

Parameters

<i>Call_Back</i>	
------------------	--

Returns

uint_8t

4.2 EXT_INT/EXT_INT.h File Reference

This file is the Implementation for Flash Driver Interface for STM32F103.

Macros

- #define **EXTI_PIN0** 0
- #define **EXTI_PIN1** 1
- #define **EXTI_PIN2** 2
- #define **EXTI_PIN3** 3
- #define **EXTI_PIN4** 0
- #define **EXTI_PIN5** 1
- #define **EXTI_PIN6** 2
- #define **EXTI_PIN7** 3
- #define **EXTI_PIN8** 0
- #define **EXTI_PIN9** 1
- #define **EXTI_PIN10** 2
- #define **EXTI_PIN11** 3
- #define **EXTI_PIN12** 0
- #define **EXTI_PIN13** 1
- #define **EXTI_PIN14** 2
- #define **EXTI_PIN15** 3
- #define **EXTI_PORTA** 0X0
- #define **EXTI_PORTB** 0X1
- #define **EXTI_PORTC** 0X10
- #define **EXTI_PORTD** 0X11
- #define **EXTI_PORTE** 0X100
- #define **EXTI_PORTF** 0X101
- #define **EXTI_PORTG** 0X110

Typedefs

- typedef void(* **CBF_t**) (void)
Pointer to function.

Functions

- uint_8t [DEXTI_Init](#) (void)
Function to initialize External Interrupt.
- uint_8t [DEXTI_SetCBF](#) ([CBF_t](#) Call_Back)
Function to Set Call Back Function.

4.2.1 Detailed Description

This file is the Implementation for Flash Driver Interface for STM32F103.

Author

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Version

0.1

Date

2020-06-05

Copyright

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4.2.2 Function Documentation

4.2.2.1 DEXTI_Init()

```
uint_8t DEXTI_Init (  
    void )
```

Function to initialize External Interrupt.

Parameters

<i>void</i>	
-------------	--

Returns

uint_8t : OK | NOK

4.2.2.2 DEXTI_SetCBF()

```
uint_8t DEXTI_SetCBF (
    CBF_t Call_Back )
```

Function to Set Call Back Function.

Parameters

<i>Call_Back</i>	
------------------	--

Returns

uint_8t

4.3 EXT_INT/EXT_INT_cfg.c File Reference

This file is the Implementation for External Interrupt Configuration for STM32F103.

```
#include "STD_TYPES.h"
#include "DGPIO.h"
#include "EXT_INT.h"
#include "EXT_INT_cfg.h"
```

Variables

- [EXTI_CFG_t](#) EXTI_CFG [NUMOFEXTI]

4.3.1 Detailed Description

This file is the Implementation for External Interrupt Configuration for STM32F103.

Author

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Version

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Date

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4.3.2 Variable Documentation

4.3.2.1 EXTI_CFG

`EXTI_CFG_t EXTI_CFG[NUMOFEXTI]`

Initial value:

```
= {
    { .GPIO_PIN.Pin = PIN_0,
      .GPIO_PIN.Mode = MODE_PIN0_AF_PP,
      .GPIO_PIN.Speed =SPEED_PIN0_INPUT,
      .GPIO_PIN.Port = PORT_A,
      .Edge = RISING_EDGE,
      .EXTICR_Channel = EXTICR1,
      .EXTI_Port = EXTI_PORTA,
      .EXTI_Pin = EXTI_PIN0
    }
}
```

4.4 EXT_INT/EXT_INT_cfg.h File Reference

This file is the Implementation for Flash Driver Interface for STM32F103.

Data Structures

- struct `EXTI_CFG_t`

Macros

- `#define NUMOFEXTI 1`
Number of External Interrupts.
- `#define RISING_EDGE 0`
Interrupt happens at rising edge.
- `#define FALLING_EDGE 1`
Interrupt happens at falling edge.
- `#define RISING_FALLING_EDGE 2`
Interrupt happens at rising and falling edge.
- `#define EXTICR1 1`
Configuration for Pins from 0 - 3 at any port.
- `#define EXTICR2 2`
Configuration for Pins from 4 - 7 at any port.
- `#define EXTICR3 3`
Configuration for Pins from 8 - 11 at any port.
- `#define EXTICR4 4`
Configuration for Pins from 12 - 15 at any port.

4.4.1 Detailed Description

This file is the Implementation for Flash Driver Interface for STM32F103.

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