EXTI Driver for STM32F103

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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 intialize External Interrupt.
- uint_8t DEXTI_SetCBF (CBF_t Call_Back)

  Function to Set Call Back Function.
- void **EXTI0_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

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Copyright

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4.1.2 Function Documentation

4.1.2.1 DEXTI_Init()

```
uint_8t DEXTI_Init (
            void  )
```

Function to intialize External Interrupt.

Parameters

void	

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

Call_Back	

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 intialize 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

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Date

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4.2.2 Function Documentation

4.2.2.1 DEXTI_Init()

```
uint_8t DEXTI_Init (
            void  )
```

Function to intialize External Interrupt.

Parameters

void	

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

Call_Back	

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.

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Version

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Date

2020-06-05

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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

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