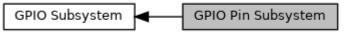
GPIO Pin Subsystem

Hardware Abstraction Layer for FreeRTOS » GPIO Subsystem

Collaboration diagram for GPIO Pin Subsystem:



Enumerations

enum	<pre>gpio_direction { GPIO_INPUT, GPIO_OUTPUT }</pre>
enum	gpio_setting { GPIO_OPEN, GPIO_PULL_UP, GPIO_PULL_DOWN }
enum	<pre>gpio_interrupt { GPIO_FALLING, GPIO_RISING, GPIO_EITHER }</pre>

Functions

struct gpio_pin *	gpioPin_init (struct gpio *gpio, uint32_t pin, enum gpio_direction dir, enum gpio_setting)
int32_t	gpioPin_deinit (struct gpio_pin *pin)
int32_t	gpioPin_enableInterrupt (struct gpio_pin *pin)
int32_t	gpioPin_disableInterrupt (struct gpio_pin *pin)
int32_t	<pre>gpioPin_setCallback (struct gpio_pin *pin, bool(*callback)(struct gpio_pin *pin, uint32_t pinID, void *data), void *data, enum gpio_interrupt inter)</pre>
int32_t	gpioPin_setDirection (struct gpio_pin *pin, enum gpio_direction dir)
int32_t	gpioPin_setSetting (struct gpio_pin *pin, enum gpio_setting setting)
int32_t	gpioPin_SchmittTrigger (struct gpio_pin *pin, bool schmitt)
int32_t	gpioPin_setValue (struct gpio_pin *pin, bool value)
int32_t	gpioPin_setPin (struct gpio_pin *pin)
int32_t	gpioPin_clearPin (struct gpio_pin *pin)
int32_t	gpioPin_togglePin (struct gpio_pin *pin)
bool	gpioPin_getValue (struct gpio_pin *pin)

Detailed Description

```
#include <gpio.h>
```

This is the Pin GPIO Subsystem for controlling one GPIO pin of a SOC.

Enumeration Type Documentation

gpio_direction

enum gpio_direction GPIO Direction Enumerator GPIO_INPUT Input GPIO_OUTPUT Output

gpio_interrupt

enum gpio_interrupt

GPIO as Interrupt

Enumerator		
GPIO_FALLING	Call a Interrupt while Falling Edge	
GPIO_RISING	Call a Interrupt while Falling Rising	
GPIO_EITHER	Call a Interrupt while Falling and Rising Edge	

• gpio_setting

enum gpio_setting

GPIO Setting

Enumerator		
GPIO_OPEN	Configure Pin without Pull down or Pull up	
GPIO_PULL_UP	Configure Pin with Pull Up	
GPIO_PULL_DOWN	Configure Pin with Pull Down	

Function Documentation

• gpioPin_clearPin()

```
int32_t gpioPin_clearPin ( struct gpio_pin * pin )
Set low on Pin
Parameters
      pin GPIO Pin Handle
Returns
      -1 on Error 0 on ok
• gpioPin_deinit()
int32_t gpioPin_deinit ( struct gpio_pin * pin )
Deinit Pin
Parameters
      pin GPIO Pin Handle
Returns
      -1 on Error 0 on ok
gpioPin_disableInterrupt()
int32_t gpioPin_disableInterrupt ( struct gpio_pin * pin )
Disable Interrupt on pin
Parameters
```

• gpioPin_enableInterrupt()

pin GPIO Pin Handle

-1 on Error 0 on ok

Returns

```
int32_t gpioPin_enableInterrupt ( struct gpio_pin * pin )

Enable Interrupt on pin

Parameters
    pin GPIO Pin Handle

Returns
    -1 on Error 0 on ok
```

• gpioPin_getValue()

bool gpioPin_getValue (struct gpio_pin * pin)

Get Value

Parameters

pin GPIO Pin Handle

Returns

-1 on Error 0 on ok

• gpioPin_init()

```
struct gpio_pin* gpioPin_init ( struct gpio *
                                                   gpio,
                              uint32_t
                                                   pin,
                              enum gpio_direction dir,
                              enum gpio_setting
                                                   setting
Init one GPIO Pin
Parameters
              GPIO Handle
      gpio
      pin
              Pin GPIO pin
      dir
              Direction
      setting Pin Settings
Returns
      GPIO Pin Handle or NULL on error
```

• gpioPin_setCallback()

```
int32_t gpioPin_setCallback ( struct gpio_pin *
                                                                                      pin,
                              bool(*)(struct gpio_pin *pin, uint32_t pinID, void *data) callback,
                              void *
                                                                                      data,
                              enum gpio_interrupt
                                                                                      inter
Set Interrupt Callback
Parameters
                GPIO Pin Handle
       pin
       callback Callback
                Data transmitted to Callback
       data
                Interrupt Setting
       inter
Returns
      -1 on Error 0 on ok
```

• gpioPin_setPin()

```
int32_t gpioPin_setPin ( struct gpio_pin * pin )

Set High on Pin

Parameters
    pin GPIO Pin Handle

Returns
    -1 on Error 0 on ok
```

• gpioPin_togglePin()

int32_t gpioPin_togglePin (struct gpio_pin * pin)

Toggle Pin

Parameters

pin GPIO Pin Handle

Returns

-1 on Error 0 on ok